

CONTRACT DOCUMENTS
and
TECHNICAL SPECIFICATIONS
for

**ELIZABETH RIVER TRAIL
PHASE 4C/5**

March 2016

**VDOT Project: EN00-122-138, C508
(UPC 103978)
FHWA Aid #TEA-5A03 (734)**



City of
Norfolk

Department of Public Works

**7th Floor, City Hall Building
Norfolk, Virginia 23510
(757) 664-4631**

**CITY OF NORFOLK
LOCALLY ADMINISTERED
STATE/FEDERALLY FUNDED PROJECT
PROJECT SPECIFICATIONS**

**ELIZABETH RIVER TRAIL - PHASE 4C/5
UPC NO. 103978
STATE PROJECT NO. EN00-122-138
FEDERAL PROJECT TEA-5A03(734)
SITE PLAN #14-0089
JANUARY 28, 2016
CONSTRUCTION PLANS**

TABLE OF CONTENTS

SECTION A – FRONT END BID DOCUMENTS	Page(s)
Table of Contents	i to ii
Invitation for Bids	1 to 2
Instructions to Bidders	1.2-1 to 1.2-4
Form of Bid	1.3-1 to 1.3-15
Contract	1.4-1 to 1.4-5
Performance Bond	1 to 2
Payment Bond	1 to 2
AIA A201-2007, General Conditions of the Contract for Construction (as amended)	1 to 49
 SECTION B.1 – REQUIRED SPCN, SP, AND SS	
VDOT Supplemental Specifications (SSs), Special Provisions (SPs), and Special Provision Copies Notes (SPCNs) (C100II3-0116)	L-5
Section 103 – Award and Execution of Contracts (c103i01-0814)	L-6
Personnel Requirements for Work Zone Traffic Control	L-6
Subcontracting (c105hf1-0309)	L-7
Predetermined Minimum Wage Rates (SF001AF-0708)	L-8
Required Contract Provisions, Federal-Aid Construction Contracts (SF010DF-0712)	L-10
Notice of Requirement for Affirmative Action to ensure Equal Employment Opportunity (Executive Order 11246) (SF030AF-0708)	L-31
Section 105.06 – Subcontracting	L-37
Use of Disadvantaged Business Enterprises (DBEs) (S107HF1-0211)	L-38
Bidder Statement (Form C-104)	1
Bidder Certificate (Form C-105)	1 to 2
Minimum DBE Requirements (Form C-111)	1
Certification of Binding Agreement with DBE Firms (Form C-112)	1 to 2

Subcontractor/Supplier Solicitation & Utilization Form (All Bidders) (Form C-48)	1
DBE – Good Faith Efforts Documentation (Form C-49)	1 to 10
Use of Domestic Material (S102CF2-0813)	1-35 to 1-37

SECTION B.1 – REVISIONS TO THE 2007 VDOT ROAD AND BRIDGE SPECIFICATIONS

Supplemental Section 207 – Select Material (SS20702-0714)	2 to 10
Supplemental Section 217 – Hydraulic Cement Concrete (SS210706-0214)	2-42 to 2-52
Supplemental Section 414 – Riprap (SS41401-0310)	4-45
Special Provision for CG-12 Detectable Warning Surface (SS04B01-0314)	5-8 to 5-9
Section 700 – General (SS70005-0815)	7-31 to 7-38
Supplemental Section 704 – Pavement Markings and Markers (SS70402-0815)	7-41 to 7-44
Section 703.04 – Saw Cut (cu703000a)	7-46

SECTION C – TECHNICAL SPECIFICATIONS

Section 303	Earthwork	1 to 2
Section 407	Steel Structures	3
Section 418	Timber Structures	4
Section 504	Sidewalks, Steps and Handrails	5
Section 510	Relocating or Modifying Existing Miscellaneous Items	6
Section 512	Maintaining Traffic	7 to 9
Section 513	Mobilization	10
Section 601	Selective Tree Removal, Trimming, and Cleanup	11
Section 602	Topsoil	12
Section 609	Tree Wells and Tree Walls	13
Section 700	General Traffic Control Devices	14 to 15
Section 701	Traffic Signs	16 to 17
Section 702	Delineators	18

APPENDICES

A	Geotechnical Report	1 to 70
---	---------------------	---------

End of Page



Posted: March 31, 2016

INVITATION FOR BIDS
CITY OF NORFOLK - DEPARTMENT OF PUBLIC WORKS

PROJECT: ELIZABETH RIVER TRAIL – PHASE 4C/5
VDOT PROJECT: EN00-122-138, C508 (UPC 103978)

Owner: City of Norfolk
Department of Public Works
Room 700, 7th floor, City Hall Building
810 Union Street, Norfolk, VA 23510

AE: Kimley-Horn and Associates, Inc.
4500 Main St., Suite 500
Virginia Beach, VA 23462

Contact: John Stevenson, Project Coordinator
Tel: (757) 664-7313 / Fax: (757) 664-7311

Contact: Stephen Brich, P.E.
Tel: (757) 634-8215

Sealed bids are to be received in Public Works Department, Attn: Contracts Office, Room 700, 7th floor, City Hall Building, 810 Union Street, Norfolk, VA 23510 until **3:00 p.m., Tuesday, April 26, 2016**, for the above titled Project.

The Work under this project consists of pedestrian and bicycle improvements for three section of the Elizabeth River Trail. Area 1 is Claremont Ave. connecting Blue Bird Park to the rail underpass on Hampton Blvd. Area 2 is Hampton Blvd. and 25th St. Area 3 is Bowdens Ferry Rd. and 26th St. The project will include at-grade and structure supported trail design, curb and sidewalk modifications, new pavement markings and project signing. **Funding for the project includes both Federal and State funds therefore the Davis-Bacon Act and VDOT conformance will apply. All prospective contractors, joint-ventures, and subcontractors shall be pre-qualified with the Virginia Department of Transportation prior to award. Information regarding VDOT prequalification can be found at www.virginiadot.org/business/const/prequal.asp . The DBE goal for this project is set at 10%.**

Bidding Documents are available from the Department of Public Works in accordance with the Instructions to Bidders upon non-refundable payment of **\$5.00 per CD** set in the form of a check made payable to Treasurer, City of Norfolk. Cash payments will not be accepted. A copy of the Bidding Documents will be on file and open to inspection at The Builders and Contractors Exchange, Inc., Norfolk, VA (757-858-0680).

A Bid Bond, certified check, or cashier's check made payable to the Treasurer, City of Norfolk, for 5% of total bid must accompany each bid.

State Contractor registration class and number is required on the outside of the envelope. The City reserves the right to cancel the bid opening or to reject any or all bids in whole or part, when it is in the best interest of the City.



Posted: March 31, 2016

The right to waive informalities and to determine responsiveness of any bid and responsibility of all bidders is reserved to the City. Withdrawal of bids will be in accordance with Section 33.1-42.1 of the Norfolk City Code and Section 11-54 of The Code of Virginia, 1950 (as amended).

David L. Ricks, P.E.
Director

City of Norfolk Web Page: www.norfolk.gov/bids.aspx March 31, 2016
City of Norfolk Public Notice Board, City Hall Building, 7th Floor – March 31, 2016

INSTRUCTIONS TO BIDDERS

1. AUTHORIZATION TO TRANSACT BUSINESS IN THE COMMONWEALTH

- (a) Bidder or offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 to include in its bid or proposal the identification number issued to it by the State Corporation Commission.
- (b) Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law shall include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized.

2. SUBMISSION OF BIDS

- (a) Make all bids on "Bid Form" and seal in opaque envelope. The name of project, the contractor's name, address, and Virginia Contractor Registration Class and Number shall be placed on the outside of the envelope.
- (b) If a contract is for \$120,000.00 or more, or if the total value of all such construction, removal, repair, or improvements undertaken by the bidder within any 12 month period is for \$750,000.00 or more, the bidder is required under Title 54, Chapter 11, Code of Virginia, 1950 (as amended), to show evidence of being licensed as a Class A Contractor. If a contract is \$7,500.00 or more, but less than \$120,000.00, or if the total value of all such construction, removal, repair or improvements undertaken by the bidder within any 12 month period is less than \$150,000, the bidder is required to show evidence of being licensed as a Class B Contractor. If a contract is \$1,000 or more, but less than \$7,500, or if the total value of all such construction, removal, repair or improvements undertaken by the bidder within any 12 month period is less than \$150,000, the bidder is required to show evidence of being licensed as a Class C Contractor. The bidder shall place on the bid above its signature its Virginia Contractor Registration Class and Number. If a contract is less than \$1,000.00, licensure is not required under Title 54, Chapter 11, Code of Virginia, 1950 (as amended).
- (c) If bids are submitted by mail, enclose the above noted envelope in a second sealed, opaque envelope and address to: **City of Norfolk, Department of Public Works, Attn: Contracts Office, Room 700, 7th floor, City Hall Building, 810 Union St., Norfolk, VA 23510.** Bids submitted by mail must be received at the above address before the time designated for bid opening.
- (d) Fully fill in all blanks in ink or typewritten, and state numbers in both writing and figures. Signatures shall be in longhand with name and title printed below. Bidders shall acknowledge all addenda in spaces provided on the bid form. For unit price contracts, in the event of a discrepancy between the Total Base Bid and the total of the extension of unit prices, the total extension of unit prices governs in determining the bid amount.
- (e) Interlineations, alterations, and irregularities of any kind may be cause for rejection of the bid. Erasures or any physical changes on the form shall be initialed by the Bidder.
- (f) Bidders may withdraw a bid after it has been submitted to the City any time prior to the stipulated time for opening such bids. Withdrawal of bids will be in accordance with Section 33.1-42.1 of the Norfolk City Code and Section 2.2-4330 of the Code of Virginia, 1950 (as amended).

3. EXAMINATION OF SITE

The bidder shall be responsible for having ascertained all pertinent local and existing conditions determinable by inspection and inquiry both on the site and adjacent thereto, including any other work being performed thereon, and shall include in its bid all cost attendant upon problems arising from said conditions existing at the time of submission of its bid.

Reference is made to the Contract Documents for information relating to reports, explorations, underground facilities, and easements. On request, the owner will provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests and studies as each Bidder deems necessary for submission of a Bid. The Bidder must fill all holes, clean up, and restore the site to its former condition upon completion of such explorations, investigations, tests and studies, and hold the Owner harmless from any damage to property or injury to persons resulting from or arising out of such explorations, investigations, tests, and studies.

4. INQUIRIES, INTERPRETATION AND ADDENDA

Should a bidder find discrepancies in, or omissions from, the drawings or documents, or should it be in doubt as to their meaning, it should at once notify the Owner in writing. The Owner will welcome such inquiries and they will be given consideration. Every interpretation made by the Owner will be in the form of a printed addendum which will be on file in the office of the Owner. Addenda will be sent to each bidder, but it will be the bidder's responsibility to know of, examine and become familiar with all addenda issued. All addenda shall become a part of the Contract Documents. The Owner will not be responsible for any oral instruction.

The submission of a Bid will constitute inconvertible representation by the Bidder that the Bidder has complied with every requirement of this Section, that without exception, the Bid is premised upon the agreement by the Bidder to perform the Work required by the Contract Documents, and applying specific means, methods, techniques, sequence or procedures of construction (if any) that may be shown or indicated or expressly required by the Contract Documents, that the Bidder has given Written Notice to the Owner of all conflicts, errors, ambiguities, and discrepancies that the Bidder has discovered in the Contract Documents and the written resolutions thereof by the Owner is acceptable to the Bidder, and that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions of performance and furnishing the Work.

THE LAST DAY TO SUBMIT RFI'S IS 5:00 P.M., TUESDAY, APRIL 19, 2016. ANY RFI SUBMITTED AFTER THIS DATE CANNOT BE GUARANTEED A RESPONSE.

5. BID GUARANTEE

Bids shall be accompanied by a bid guarantee of five percent (5%) of the amount of the total bid including all additive alternates, if any, and may be a certified check or cashier's check or a Bid Bond, made payable to: **Treasurer, City of Norfolk**. Such bid bond or check shall be submitted with the understanding that it shall guarantee that the bidder will not withdraw its bid during the period of sixty (60) days following the opening of bids; that if its bid is accepted, it will enter into a Contract with the Owner in accordance with a form of agreement acceptable to and approved by the Owner and that the required Performance and Payment Bonds will be given; and that in the event of the withdrawal of said bid within said period, or failure to enter into said contract and given said bonds within ten (10) days after it has received notice of acceptance of its bid, the bidder shall be liable to the Owner for the full amount of the bid guarantee as representing the damage to the Owner on account of the default of the bidder in any particular thereof. The bid bonds and checks will be returned to the bidders after the Owner and the lowest, responsive, responsible bidder have executed a contract. If the required contract has not been executed within sixty (60) days after the date of the opening of the bids, then the bond or check of any bidder will be returned upon its request, provided it has not been notified of the acceptance of its bid prior to the date of such request.

6. PERFORMANCE AND PAYMENT BOND

The Contractor shall furnish a performance bond and a labor and material payment bond each in the amount of 100% of the contract price. Said bonds shall be delivered to the Owner (in duplicate) and shall be approved by the Owner prior to the execution of a construction contract between the Contractor and the Owner. Bonds shall be City

of Norfolk standard form and shall be in accordance with Section 33.1-76 of the Norfolk City Code. All costs of bonds shall be paid by the Contractor. A bond rider will be required should change orders increase the amount of the contract by \$100,000 or more.

7. TIME OF COMPLETION

(a) Time is of the essence. All work shall be completed within **One Hundred Eighty (180)** calendar days from the Notice to Proceed. Work shall commence within (10) ten days from date of Notice to Proceed.

(b) Work shall not commence until the Contractor has received a fully executed copy of the Contract which authorizes the Work and has also received a Notice to Proceed issued by the authorized City representative. Work commenced prior to receipt of both a fully executed copy of the Contract and a written Notice to Proceed from an authorized City official shall be deemed unauthorized and such work will progress solely at Contractor's risk.

8. NON-DISCRIMINATION CLAUSE

The Contractor agrees to comply, and to require all suppliers and subcontractors paid in whole or in part from funds made available under this contract to comply with Section 122(a)(1) of the State and Local Fiscal Assistance Act of 1972 (P. L. 92-512), as amended, to wit:

"No person in the United States shall, on the grounds of race, color, national origin, or sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity of a State government or unit of local government, which government or unit receives funds made available under Subtitle A (of Title I of the Act.)

Any prohibition against discrimination on the basis of age under the Age Discrimination Act of 1975 or with respect to an otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973 shall also apply to any such program or activity.

Any prohibition against discrimination on the basis of religion, or any exemption from such prohibition, as provided in the Civil Rights Act of 1964 or Title VIII of the Act of April 11, 1968, hereafter referred to as the Civil Rights Act of 1968, shall also apply to any such program or activity."

Further, the Contractor agrees to comply with Section 33.1-53 of the Code of the City of Norfolk, Virginia 1979, as amended, regarding prohibited employment discrimination.

9. MINORITY BUSINESS CLAUSE

It is the policy of the City of Norfolk to facilitate the establishment, preservation, and strengthening of small businesses and businesses owned by women and minorities and to encourage their participation in the City's procurement activities. Toward that end, the City encourages these firms to compete and encourages non-minority firms to provide for the participation of small businesses and businesses owned by women and minorities through partnerships, joint ventures, subcontracts, and other contractual opportunities. Bidders (offerors) are asked, as part of their submission, to describe any planned use of such businesses in fulfilling this contract.

10. NON-COLLUSION AFFIDAVIT

(a) Every bidder, by submitting a bid, shall be deemed to covenant, with regard to said bid, as follows:

(1) that said bid was arrived at independently without collusion, consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.

(2) that, unless otherwise required by law, the prices which have been quoted in the bid submitted have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor.

(3) that no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

A bid shall not be considered for award nor shall any award be made where the bidder shall have failed to comply with a(1), a(2), or a(3) above.

(b) Every bidder, in addition to making the above covenants (a)(1), (a)(2) and (a)(3) will be required to provide the City of Norfolk, with the bid submitted, the affidavit contained herein.

(c) Every bidder will be required to disclose, with the submitted bid, the following information:

(1) the correct mailing address of the bidder.

(2) if a corporation, the name and current mailing address of the President, the Secretary and the Treasurer of the corporation.

(3) if a partnership, proprietorship or other firm, the name and current mailing address of each partner, proprietor or member of said firm.

(4) whether or not the bidder is associated with; owns, in whole or in part; or is owned, in whole or in part, or is a subsidiary of, any other bidder.

(d) The fact that a bidder (1) has published price lists, rates or tariffs covering items included in the submitted bid; (2) has informed prospective customers of proposed or pending publication of new or revised price lists for such items; or (3) has sold the same items to other customers at the same prices being bid, does not constitute a disclosure within the meaning of Subparagraph 9(a).

(e) Any bid submitted by a corporate bidder shall be deemed to have been authorized by the Board of Directors of the bidder and such authorization shall be deemed to include the signing and submission of the bid and the execution of the affidavit required in (b) above as the acts and deeds of the corporation.

11. SUBSTANCE ABUSE AND DRUG-FREE WORK PLACE

The Contractor agrees to comply with Section 33.1-58 of the Code of the City of Norfolk, Virginia, 1996, as amended, regarding substance Abuse and Drug-Free Work Place Policy.

End of Page

Bids to be opened: **3:00 p.m., Tuesday
April 26, 2016**

Work to be Completed in: **180 calendar days**

Liquidated Damages: **\$350.00 per day to Substantial Completion
\$350 per day to Final Completion**

Performance Bond: **100%**

Payment Bond: **100%**

Bid Bond: **5%**

BID FORM

To: City of Norfolk
Department of Public Works
City Hall Building
810 Union Street, Room 700
Norfolk, Virginia 23510

A. UNIT PRICE BID

In compliance with the Invitation for Bids and Instructions to Bidders, the General Conditions of the Contract, the contract drawings and specifications titled **ELIZABETH RIVER TRAIL – PHASE 4C/5; VDOT PROJECT: EN00-122-138, C508 (UPC 103978)** and all addenda issued to date, all of which are part of this bid, the undersigned hereby proposes to furnish all items, including materials, labor, and equipment called for by, and in strict accordance with Contract Documents and the list of unit prices hereto attached and referred to as Attachment A, for the sum of:

\$_____ Dollars and
(use words)
_____ Cents (\$_____)

B. ADDENDA

The undersigned acknowledges receipt of the following addenda:

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

We agree to enter into a contract with the City of Norfolk, Virginia within ten (10) days of the award of same to us for the price named in our bid.

It is expressly agreed by us that the City of Norfolk, Virginia shall have the right to reject any and all bids and to waive any informalities.

In default of the performance on our part of the conditions of bid, our failure to enter into a contract with the City of Norfolk, Virginia, within the time above set, we herewith furnish a certified check, cashier's check (or Bid Bond) in the amount of \$_____, which shall be forfeited as liquidated damages to the City of Norfolk, Virginia, but otherwise the said check or

Bid Bond shall be returned.

We agree to begin work at any time after receipt of the Notice to Proceed from the Director of Public Works and complete all of the Work within **One Hundred Eighty (180) calendar days**.

C. Norfolk Businesses: It is the policy of the City to support Norfolk businesses and workforce development and it encourages companies with corporate offices in Norfolk and which employ Norfolk residents to compete for City contracts. Bidders are asked, as part of their submission, to advise of their Norfolk location and detail their employment of Norfolk residents.

D. Equal Opportunity Business Development: It is the policy of the City of Norfolk to facilitate the establishment, preservation, and strengthening of small businesses and businesses owned by women and minorities and to encourage their participation in the City's procurement activities. Toward that end, the City encourages these firms to compete and encourages non-minority firms to provide for the participation of small businesses and businesses owned by women and minorities through partnerships, joint ventures, subcontracts, and other contractual opportunities. Bidders (offerors) are asked, as part of their submission, to describe any planned use of such businesses.

1. Is your firm a minority owned business? Yes ___ No ___ If yes, please check the appropriate category: ___ African American (male), ___ African American (female), ___ Caucasian (female), ___ Hispanic (male), ___ Hispanic (female), ___ Asian American (male), ___ Asian American (female), ___ American Indian (male), ___ American Indian (female), ___ Eskimo (male), ___ Eskimo (female), ___ Aleut (male), ___ Aleut (female), ___ Other (male), ___ Other (female).

2. Subcontracting Opportunities for Small, Women Owned, Minority Business Enterprises and Disabled Veterans. All prime contractors are requested to furnish the following information regarding participation of small, women owned, minority business enterprises and disabled veterans:

a. Proposed Name of your Subcontractor(s):

b. Proposed Minority Category of Subcontractor(s) - please check the appropriate category(ies):

<input type="checkbox"/> African American (male)	<input type="checkbox"/> African American (female)
<input type="checkbox"/> Hispanic (male)	<input type="checkbox"/> Hispanic (female)
<input type="checkbox"/> Asian American (male)	<input type="checkbox"/> Asian American (female)
<input type="checkbox"/> American Indian (male)	<input type="checkbox"/> American Indian (female)
<input type="checkbox"/> Eskimo (male)	<input type="checkbox"/> Eskimo (female)
<input type="checkbox"/> Aleut (male)	<input type="checkbox"/> Aleut (female)
<input type="checkbox"/> Other (male)	<input type="checkbox"/> Caucasian (female)
	<input type="checkbox"/> Other (female)

c. Proposed Amount of Subcontracts:

d. Proposed Description of commodity (i.e. masonry, hauling, insulation, etc.):

e. Proposed Description of Project:

f. Proposed Total value of awards to all subcontractors:

g. Proposed Total Number of minority subcontracts awarded:

h. If you do not propose the use of any subcontractors, please check here ____.

E. The undersigned has read all sections under "Instructions to Bidders."

F. **CONTRACTOR'S REGISTRATION AND SIGNATURE**

Registered Virginia Contractor Class and No. _____

City of Norfolk Business License No. _____

Contractor _____ Signed _____ (SEAL)

Date _____ Title _____

NOTE: If Bidder is a corporation, write state of incorporation under signature and if a partnership, give full names of all partners.

END OF PAGE

**THIS
PAGE
INTENTIONALLY
LEFT
BLANK**

AFFIDAVIT

City of Norfolk, Virginia project: **ELIZABETH RIVER TRAIL – PHASE 4C/5**

Bid Date: _____

STATE OF VIRGINIA

(City/County)

This day personally appeared before the undersigned, a Notary Public in and for the City/County and State aforesaid,

_____, who having been first duly sworn according to law, did depose and aver as follows:

(a) That he is _____
(owner, partner, president, etc.)

of _____
(insert name of bidder)

(b) That he is personally familiar with the bid of

_____ submitted in connection with the above captioned City of Norfolk project.

(c) That said bid was formulated and submitted in good faith as the true bid of said bidder.

(d) That said bid in no manner violates the Sherman Antitrust Act (15 U.S.C. '1 *et seq.*), The Virginia Antitrust Act (§59.1-9.1 through §59.1-9.17 Code of Virginia, (1950), as amended) or the Conspiracy to Rig Bids to Government Act (§§59.1-68.8, Code of Virginia (1950), as amended.

And further this deponent saith not.

Affiant

Subscribed and sworn to before me this _____ day of _____, 20__.

My commission expires: _____, 20__

Notary Public

MAILING ADDRESS, FAX, TELEPHONE NUMBER AND EMAIL OF BIDDER:

IF CORPORATION, PROVIDE NAME AND MAILING ADDRESS AS REQUIRED BELOW

PRESIDENT

SECRETARY

TREASURER

<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>

IF PARTNERSHIP, PROPRIETORSHIP, OR OTHER FIRM, PROVIDE NAME AND MAILING ADDRESS OF EACH PARTNER, PROPRIETOR, OR MEMBER OF FIRM.

<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>

END OF PAGE

A. COMPLIANCE WITH STATE LAW

B. AUTHORIZATION TO TRANSACT BUSINESS IN THE COMMONWEALTH

I. CERTIFICATION

- A. The Bidder/Vendor (Please fill in with your enterprise's complete name)

certifies that it is organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50.

The identification number issued to Bidder/Vender by the State Corporation Commission:

- B. Bidder/Vendor that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law shall describe why it is not required to be so authorized:

II. INSTRUCTIONS

a. The Bidder/Vendor shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Vendor learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

b. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Bidder's/Vendor's responsibility. Failure of the Bidder/Vendor to furnish a certification or provide such additional information as requested by the

appropriate City purchasing official may render the Bidder/Vendor non-responsible.

c. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of a Bidder/Vendor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

d. The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Bidder/Vendor knowingly rendered an erroneous certification, in addition to other remedies available to the City, the appropriate City purchasing official may terminate the contract resulting from this solicitation for default.

End of Page

SCHEDULE OF UNIT PRICES

ELIZABETH RIVER TRAIL – PHASE 4C/5

OWNER: CITY of NORFOLK, VIRGINIA

The unit prices have been computed in accordance with Subparagraph 7.3.3.2 of the General Conditions. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents. The prices quoted shall include, without exception, all materials, labor, equipment, appliances, clean-up, applicable sales, use and other taxes, building permits or fees, and the Contractor's labor, overhead, profit, mobilization and other mark-ups, and in full accordance with the Specifications. Include allowance for waste where appropriate. The unit prices shall be maintained throughout the contract period. Unit prices shall be used in determining additions or deductions from the TOTAL CONTRACT AWARD amount in the event of changes in the work.

Item #	Description	Unit	Qty	Price	Extension
	AREA 1				
1	Mobilization (Section 513)	LS	1		
2	Construction Surveying (Section 517)	LS	1		
3	Maintenance of Traffic (Section 512)	LS	1		
4	Clearing and Grubbing (Section 301)	LS	1		
5	Temporary Construction Entrance (Section 303)	EA	1		
6	Temporary Silt Fence (Section 303)	LF	210		
7	Temporary Tree Protection (Section 303)	LF	530		
8	Temporary Inlet Protection (Section 303)	EA	2		
9	Remove Existing Curb and Gutter (Section 510)	LF	235		
10	Remove Existing Retaining Wall (Section 510)	LF	80		
11	Remove Existing Concrete Sidewalk (Section 510)	SY	200		
12	Remove Existing Reinforced Concrete Pavement (Section 510)	SY	260		
13	Remove Existing Asphalt Sidewalk (Section 510)	SY	115		
14	Remove Existing Bushes and Ground Cover (Section 510)	LS	1		
15	Remove Existing Handrail (Section 5100)	LF	38		
16	Remove Existing Bollard (Section 510)	EA	1		

ATTACHMENT A-1

Item #	Description	Unit	Qty	Price	Extension
17	Remove Existing Lane Delineators (Section 510)	EA	13		
18	Selective Tree Removal (Section 601)	LS	1		
19	Reset Existing Manhole Top (Section 510)	EA	1		
20	Sign Removal (Section 510)	EA	9		
21	Saw Cut (Asphalt) (Section 703)	LF	85		
22	Saw Cut (Concrete) (Section 703)	LF	55		
23	Saw Cut (Reinforced Concrete) (Section 703)	LF	200		
24	Hydraulic Cement Concrete Sidewalk (4" Depth) (HRPDC CI-09) (Section 504)	SY	315		
25	Hydraulic Cement Concrete Driveway (6" Depth) (HS-207) (Section 504)	SY	6		
26	Handrail (Galvanized Steel) (Section 504)	LF	110		
27	Concrete Class A3 (Wall and Curb Combination) (Section 404)	CY	25		
28	Modified Std. 6" Parkway Curb (HS-201) (Section 404)	LF	20		
29	Std. 6" Parkway Curb (HS-201) (Section 502)	LF	120		
30	Radial Std. 6" Parkway Curb (HS-201) (Section 502)	LF	55		
31	CG-12 Curb Ramp w/Detectable Warning Surface (Section 504)	SY	10		
32	Regular Excavation (Section 303)	CY	120		
33	Aggregate Base Matl. Type I, No. 21A (Section 308)	TON	30		
34	Select Material Type II, Min CBR-20 (Section 305)	CY	250		
35	Grass Planting (HS-601) (Section 602)	SY	480		
36	Tree Root Protection (Section 609)	LF	225		
37	Reflectorized Sleeve (Section 702)	EA	1		
38	Furnish and Install R1-1 Sign (30"x30") (Section 701)	SF	7		
39	Furnish and Install R1-2 Sign (30"x30") (Section 701)	SF	7		

ATTACHMENT A-2

Item #	Description	Unit	Qty	Price	Extension
40	Furnish and Install R3-1 Sign (24"x24") (Section 701)	SF	4		
41	Furnish and Install W5-1 Sign (30"x30") (Section 701)	SF	7		
42	Furnish and Install Mod. W5-2 Sign (30"x30") (Section 701)	SF	7		
43	Furnish and Install W6-1 Sign (36"x12") (Section 701)	SF	3		
44	Furnish and Install W16-9P Sign (24"x12") (Section 701)	SF	2		
45	Furnish and Install "WALK BICYCLES THROUGH UNDERPASS" (24"X18") (Section 701)	SF	3		
46	Furnish and Install "DO NOT BLOCK DRIVEWAY" SIGN (18"X12") (Section 701)	SF	4		
47	Furnish and Install "NO MOTOR VEHICLES" (24"X18") (Section 701)	SF	3		
48	Furnish and Install "PARK HOURS" (18"X12") (Section 701)	SF	2		
49	Furnish and Install "RULES" (12"X6") (Section 701)	SF	1		
50	Furnish and Install Sign Post Steel (Section 700)	LF	96		
51	Type B, Class VI Pavement Line Marking 4" (Section 704)	LF	315		
52	Type B, Class VI Pavement Line Marking 6" (Section 704)	LF	70		
53	Type B, Class VI Pavement Line Marking 12" (Section 704)	LF	65		
54	Type B, Class VI Pavement Line Marking 24" (Section 704)	LF	55		
55	Pavement Message Marking Elongated Arrow Single (Section 704)	EA	1		
56	Pavement Message Marking "Yield" (Section 704)	EA	1		
57	Pavement Message Marking "Only" (Section 704)	EA	1		
58	Flame Amur Maple (1.5" Cal.) (Section 605)	EA	5		

ATTACHMENT A-3

Item #	Description	Unit	Qty	Price	Extension
59	Eastern Redbud (1.5" Cal.) (Section 605)	EA	5		
60	Red Oak (1.5" Cal.) (Section 605)	EA	1		
	SUBTOTAL – AREA 1				\$
	AREA 2				
1	Mobilization (Section 512)	LS	1		
2	Maintenance of Traffic (Section 303)	LS	1		
3	Temporary Inlet Protection (Section 510)	EA	3		
4	Remove Existing Curb and Gutter (Section 510)	LF	75		
5	Remove Existing Concrete Sidewalk (Section 510)	SY	70		
6	Reset Valve Box (Section 510)	EA	1		
7	Reset Cleanout (Section 703)	EA	1		
8	Saw Cut (Concrete) (Section 504)	LF	30		
9	CG-12 Curb Ramp w/Detectable Warning Surface (Section 504)	SY	13		
10	Hydraulic Cement Concrete Sidewalk (4" Depth) (HRPDC CI-09) (Section 502)	SY	46		
11	Std. 6" Curb and Gutter (HS-202) (Section 502)	LF	15		
12	Radial Std. 6" Curb and Gutter (HS-202) (Section 502)	LF	15		
13	Std. 6" Parkway Curb (HS-201) (Section 303)	LF	65		
14	Regular Excavation (Section 305)	CY	16		
15	Select Material Type II, Min CBR-20 (Section 602)	CY	16		
16	Grass Planting (HS-601) (Section 302)	SY	45		
17	Reconstructed Manhole (Section 302)	EA	1		
	SUBTOTAL AREA 2				\$
	AREA 3				
1	Mobilization (Section 513)	LS	1		
2	Construction Surveying (Section 517)	LS	1		
3	Maintenance of Traffic (Section 512)	LS	1		
4	Clearing and Grubbing (Section 301)	LS	1		

ATTACHMENT A-4

Item #	Description	Unit	Qty	Price	Extension
5	Temporary Construction Entrance (Section 303)	EA	2		
6	Temporary Silt Fence (Section 303)	LF	595		
7	Temporary Tree Protection (Section 303)	LF	280		
8	Temporary Inlet Protection Section 303)	EA	1		
9	Remove Existing Curb and Gutter (Section 510)	LF	53		
10	Remove Existing Concrete Sidewalk (Section 510)	SY	18		
11	Remove Existing Concrete Flume (Section 510)	SY	7		
12	Selective Tree Removal (Section 601)	LS	1		
13	Removal of Rip Rap (Section 510)	LS	1		
14	Saw Cut (Concrete) (Section 703)	LF	8		
15	Hydraulic Cement Concrete Sidewalk (4" Depth) (HRPDC CI-09) (Section 504)	SY	450		
16	CG-12 Curb Ramp w/Detectable Warning Surface (Section 504)	SY	18		
17	Std. 6" Curb and Gutter (HS-202) (Section 502)	LF	76		
18	Regular Excavation (Section 303)	CY	100		
19	Select Material Type II, Min CBR-20 (Section 305)	CY	200		
20	Erosion Control Stone Class A1 (EC-1) (Section 414)	TON	3		
21	Erosion Control Stone Class II (24" Riprap) (Section 414)	TON	30		
22	Erosion Control Protective Covering (EC-2) (Section 414)	SY	70		
23	Geotextile (Embankment Stabilization) (Section 303)	SY	100		
24	VDOT #57 Stone	TON	15		
25	Grass Planting (HS-601) (Section 602)	SY	585		
26	Root Barrier (Section 609)	LF	210		
27	Timber Handrail (54" tall) (Section 418)	LF	245		
28	Steel Bollard (Section 507)	EA	2		

ATTACHMENT A-5

Item #	Description	Unit	Qty	Price	Extension
29	Furnish and Install R1-1 Sign (30"x30") (Section 701)	SF	5		
30	Furnish and Install R1-2 Sign (30"x30") (Section 701)	SF	7		
31	Furnish and Install R4-11 Sign (30"x30") (Section 701)	SF	13		
32	Furnish and Install R5-3 Sign (24"x24") (Section 701)	SF	8		
33	Furnish and Install D11-1 Sign (18"x18") (Section 701)	SF	6		
34	Furnish and Install "Elizabeth River Trail" Sign (8"x10") (Section 701)	SF	2		
35	VDOT Standard Endwall (EW-1) (Section 302)	EA	1		
36	15" Concrete Pipe, Class III (Section 302)	LF	15		
37	24" Concrete Pipe, Class III (Section 30)	LF	22		
38	Modified VDOT Standard DI-3C (L=6') (Section 302)	EA	1		
39	Manhole MH-1 (Section 302)	EA	1		
40	Furnish and Install Sign Post Steel (Section 700)	LF	60		
41	Pavement Message Marking Share Road Symbol (Section 704)	EA	4		
42	Pavement Message Marking "Yield" (Section 704)	EA	1		
43	Bridge	LS	1		
44	Flame Amur Maple (1.5" Cal.) (Section 605)	EA	2		
45	Eastern Redbud (1.5" Cal.) (Section 605)	EA	6		
46	Sugar Tyme Crab Apple (1.5" Cal.) (Section 605)	EA	3		
47	Red Oak (1.5" Cal.) (Section 605)	EA	1		
48	Littleleaf (1.5" Cal.) (Section 605)	EA	1		
	SUBTOTAL AREA 3				\$

ATTACHMENT A-6

	TOTAL BID (AREAS 1, 2, AND 3)				\$
--	--------------------------------------	--	--	--	----

TOTAL BID: _____
 _____**DOLLARS AND** _____**CENTS**

 CONTRACTOR’S SIGNATURE / DATE

\

THE CITY OF NORFOLK, VIRGINIA

OFFICE OF THE CITY MANAGER

CONTRACT

THIS AGREEMENT, made as of the ____ day of _____ in the year **2016**, is between the **City of Norfolk, Virginia**, acting by and through the City Manager, hereinafter styled the **City**, and

party of the second part, hereinafter styled the **Contractor**.

WITNESSETH, That whereas the City has awarded to the Contractor, in accordance with his bid of **April 26, 2016** a contract for **ELIZABETH RIVER TRAIL – PHASE 4C/5; VDOT PROJECT EN00-122-138, C508 (UPC 103978)** as described in specifications and drawings prepared therefor by **Kimley-Horn and Associates, 4500 Main St., Suite 500, Virginia Beach, Virginia 23462** hereinafter styled the Engineer, or by the City of Norfolk, and on file in the office of the Director of Public Works of the City of Norfolk, Virginia.

ARTICLE 1 - THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 2 - DATE OF COMMENCEMENT AND COMPLETION TIMES

The Contractor further agrees to begin Work at such a date as the Director of Public Works Department, Norfolk, Virginia, shall notify it to begin via a Notice to Proceed letter, and that it will achieve Substantial Completion of the entire Work in accordance with Paragraph 9.8 of the General Conditions not later than **One Hundred Eighty (180) consecutive calendar days** from the date of commencement as well as achieve Final Completion in accordance with Paragraph 9.10 of the General Conditions not later than **Thirty (30) consecutive calendar days** from the date of commencement.

ARTICLE 3 - LIQUIDATED DAMAGES

The Contractor and the City recognize that time is of the essence of this Agreement. In view of the difficulty of ascertaining the loss which the City will suffer by reason of delay in the performance of the Work, the Contractor and the City hereby agree upon as the liquidated damages set below that the City will suffer by reason of delay and/or default, and not as a penalty. Further, the City shall deduct and retain the amount of such liquidated damages out of the moneys which may be due or become due to the Contractor under this Agreement.

Accordingly, should the Contractor fail to achieve Substantial Completion of the aforesaid Work in accordance with the contract documents to the satisfaction and approval of the Engineer within the time stipulated in Article 2 above, the Contractor shall pay to the City of Norfolk, Virginia, **Three Hundred**

Fifty Dollars and Zero Cents (\$350.00) for every calendar day beyond the time set for substantial completion.

After Substantial Completion, if the Contractor shall neglect, refuse, or fail to complete the remaining Work within the contract time or any proper extension thereof granted by the City, the Contractor shall pay the City **Three Hundred Fifty Dollars and Zero Cents (\$350.00)** for every calendar day beyond the time set for final completion until the Work is completed and ready for final payment

ARTICLE 4 - CONTRACT PRICE

The City shall pay the Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined below subject to additions and deductions as provided in the Contract Documents:

For all Unit Price Work, an amount equal to the sum of the established unit prices hereto attached and referred to as Attachment A, for:

_____ **Dollars and** _____ **Cents (\$_____)**

Estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by the Engineer's recommendation to the City.

ARTICLE 5 - PAYMENTS

Based upon applications for payment submitted to the Engineer by the Contractor and certificates for payment issued by the Engineer, the City shall make monthly progress payments on account of the contract sum to the Contractor as provided in the conditions of the contract as follows:

The City will pay the Contractor, on or about the thirtieth calendar day after receipt of a Request for Payment, one hundred percent (100%) of the portion of the contract sum properly allocable to labor, materials, and equipment incorporated in the Work and eighty percent (80%) of the portion of the contract sum properly allocable to materials and equipment suitably stored at the site or at some other location agreed upon in writing by the parties, less the aggregate of previous payments in each case; provided, however, that the owner, at any time after fifty percent (50%) of the Work has been completed, if it finds that satisfactory progress is being made, may make any of the remaining partial payments in full; and upon final completion, a sum sufficient to increase the total payment to one-hundred percent (100%) of the contract sum. But such full payment or payments shall in no manner be construed as reducing the amount of the bond, or the liability of the surety thereon, until final completion and acceptance of all items of Work herein set forth.

The action of the Engineer by which the Contractor is to be bound according to the terms of this contract shall be that evidenced by his final estimate and certificate, all prior estimates upon which eighty percent (80%) or more may be made, being merely payment on account, and not payments for accepted Work, and subject to the correction of such final estimate, which may be made with notice to the Contractor.

ARTICLE 6 - CONTRACTOR'S REPRESENTATION

To induce the City to enter into this Contract, the Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents and other related data identified in the Bidding Documents.
- B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all federal, state, and local laws and regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site which have been provided with the Contract Documents, and (2) reports and drawings of a hazardous environmental condition, if any, at the site, which have been provided with the Contract Documents.
- E. Contractor has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work.
- F. Contractor is aware of the general nature of Work to be performed by City and others at the Site that relates to the Work as indicated in the Contract Documents.
- G. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor
- H. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- I. Contractor hereby certifies that it has familiarized itself with Sections 33.1-86 through 33.1-93 of the Code of the City of Norfolk, Virginia, 1979, as amended, entitled "Ethics in Public Contracting," including the additional statutes set forth in Section 33.1-86 thereof, and further that all amounts received by the Contractor pursuant to this Contract are proper and in accordance therewith.
- J. Contractor hereby certifies that at all times during which any term of this Agreement is in effect, it does not and shall not knowingly employ any unauthorized alien. For purposes of this section, an "unauthorized alien" shall mean any alien who is neither lawfully admitted for permanent residence in the United States nor authorized to be employed by either Title 8, section 1324a of the United States Code or the U.S. Attorney General.
- K. Contractor hereby represents that it is organized as a stock or non-stock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership and is authorized to transact business in the Commonwealth as a domestic or foreign business entity if

so required by Title 13.1 or Title 50 or as otherwise required by law.

ARTICLE 7 - CONTRACT DOCUMENTS

The Contract Documents consist of the following:

- a. Invitation for Bids
- b. Instructions to Bidders
- c. Bid Form/Affidavit
- d. Bid Bond
- e. Contract
- f. Performance Bond
- g. Payment Bond
- h. Certificate of Insurance
- i. Notice of Award
- j. Notice to Proceed
- k. Change Orders (if any)
- l. Other Documents as may be required by law or appended hereto
- m. Plans and Drawings prepared by: **Kimley-Horn and Associates, 4500 Main St., Suite 500, Virginia Beach, Virginia 23462**
- n. Specifications prepared or issued by: **Kimley-Horn and Associates, 4500 Main St., Suite 500, Virginia Beach, Virginia 23462**
- o. Addendum (as listed in Bid Form)

Witness the following signatures and seals:

Witness:

_____(SEAL)
Contractor

Signature

Printed Name

Seal if
Incorporated

Title

Virginia State Contractor's License No. _____

City of Norfolk Business License No. _____

Contents Approved:

Director of Public Works

Approved as to form and correctness:

Deputy City Attorney

CITY OF NORFOLK, VIRGINIA

By

City Manager

Attest:

City Clerk

Certification of Funds

I hereby certify that the money required for this contract (agreement, obligation or expenditure) is in the City Treasury to the credit of the fund from which it is to be drawn, and not appropriated for any other purpose.

Account: _____

Amount: _____

Contract No.: _____

Vendor Code: _____

Director of Finance

Date



AIA®

Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Elizabeth River Trail - Phase 4C/5

THE CITY OF NORFOLK, a municipal corporation of the Commonwealth of Virginia,
hereinafter called the "City" or the OWNER:

(Name, legal status and address)

This document has important
legal consequences.

Consultation with an attorney
is encouraged with respect to
its completion or modification.

THE ARCHITECT:

(Name, legal status and address)

TABLE OF ARTICLES

- | | |
|----|--|
| 1 | GENERAL PROVISIONS |
| 2 | OWNER |
| 3 | CONTRACTOR |
| 4 | ARCHITECT |
| 5 | SUBCONTRACTORS |
| 6 | CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS |
| 7 | CHANGES IN THE WORK |
| 8 | TIME |
| 9 | PAYMENTS AND COMPLETION |
| 10 | PROTECTION OF PERSONS AND PROPERTY |
| 11 | INSURANCE AND BONDS |
| 12 | UNCOVERING AND CORRECTION OF WORK |
| 13 | MISCELLANEOUS PROVISIONS |
| 14 | TERMINATION OR SUSPENSION OF THE CONTRACT |
| 15 | CLAIMS AND DISPUTES |

Init.

AIA Document A201™ – 2007. Copyright © 1911, 1915, 1918, 1925, 1937, 1951, 1958, 1961, 1963, 1966, 1970, 1976, 1987, 1997 and 2007 by The American Institute of Architects. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. This document was produced by AIA software at 10:27:21 on 02/23/2016 under Order No.3537368429_1 which expires on 09/01/2016, and is not for resale.

User Notes:

(1498575472)

INDEX

(Topics and numbers in bold are section headings.)

Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, **12.3**

Access to Work

3.16, 6.2.1, **12.1**

Accident Prevention

10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5, 10.2.8, 13.4.2, 13.7, 14.1, 15.2

Addenda

1.1.1, 3.11

Additional Costs, Claims for

3.7.4, 3.7.5, 6.1.1, 7.3.7.5, 10.3, 15.1.4

Additional Inspections and Testing

9.4.2, 9.8.3, **12.2.1**, **13.5**

Additional Insured

11.1.4

Additional Time, Claims for

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.5**

Administration of the Contract

3.1.3, **4.2**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13

Allowances

3.8, 7.3.8

All-risk Insurance

11.3.1, 11.3.1.1

Applications for Payment

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.6.3, 9.7, 9.10,

11.1.3

Approvals

2.1.1, 2.2.2, 2.4, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10,

4.2.7, 9.3.2, **13.5.1**

Arbitration

8.3.1, 11.3.10, 13.1, 15.3.2, **15.4**

ARCHITECT

4

Architect, Definition of

4.1.1

Architect, Extent of Authority

2.4, 3.12.7, 4.1, 4.2, 5.2, 6.3, 7.1.2, 7.3.7, 7.4, 9.2, 9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.5.1, 13.5.2, 14.2.2, 14.2.4, 15.1.3, 15.2.1

Architect, Limitations of Authority and Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2, 9.5.3, 9.6.4, 15.1.3, 15.2

Architect's Additional Services and Expenses

2.4, 11.3.1.1, 12.2.1, 13.5.2, 13.5.3, 14.2.4

Architect's Administration of the Contract

3.1.3, 4.2, 3.7.4, 15.2, 9.4.1, 9.5

Architect's Approvals

2.4, 3.1.3, 3.5, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.1.7, 1.5

Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3, 7.3.7, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1, 13.5.2, 15.2, 15.3

Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.5

Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.5.2

Architect's Interpretations

4.2.11, 4.2.12

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.5, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.1.3, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3.7, 12, 13.4.2, 13.5, 15.2

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3.7

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

Award of Subcontracts and Other Contracts for Portions of the Work

5.2

Basic Definitions

1.1

Bidding Requirements

1.1.1, 5.2.1, 11.4.1

Binding Dispute Resolution

9.7, 11.3.9, 11.3.10, 13.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.4.1

Boiler and Machinery Insurance

11.3.2

Bonds, Lien

7.3.7.4, 9.10.2, 9.10.3

Bonds, Performance, and Payment

7.3.7.4, 9.6.7, 9.10.3, 11.3.9, **11.4**

Init.

Building Permit

3.7.1

Capitalization

1.3

Certificate of Substantial Completion

9.8.3, 9.8.4, 9.8.5

Certificates for Payment

4.2.1, 4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7,

9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.3

Certificates of Inspection, Testing or Approval
13.5.4

Certificates of Insurance

9.10.2, 11.1.3

Change Orders

1.1.1, 2.4, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8,
5.2.3, 7.1.2, 7.1.3, 7.2, 7.3.2, 7.3.6, 7.3.9, 7.3.10,
8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.3.1.2, 11.3.4, 11.3.9,
12.1.2, 15.1.3

Change Orders, Definition of

7.2.1

CHANGES IN THE WORK

2.2.1, 3.11, 4.2.8, 7, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1,
11.3.9

Claims, Definition of

15.1.1

CLAIMS AND DISPUTES

3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, 15, 15.4

Claims and Timely Assertion of Claims

15.4.1

Claims for Additional Cost

3.2.4, 3.7.4, 6.1.1, 7.3.9, 10.3.2, 15.1.4

Claims for Additional Time

3.2.4, 3.7.4, 6.1.1, 8.3.2, 10.3.2, 15.1.5

Concealed or Unknown Conditions, Claims for
3.7.4

Claims for Damages

3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1,

11.3.5, 11.3.7, 14.1.3, 14.2.4, 15.1.6

Claims Subject to Arbitration

15.3.1, 15.4.1

Cleaning Up

3.15, 6.3

Commencement of the Work, Conditions Relating to

2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3,
6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.3.1, 11.3.6, 11.4.1,
15.1.4

Commencement of the Work, Definition of

8.1.2

Communications Facilitating Contract

Administration

3.9.1, 4.2.4

Completion, Conditions Relating to

3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1,
9.10, 12.2, 13.7, 14.1.2

COMPLETION, PAYMENTS AND

9

Completion, Substantial

4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3,
12.2, 13.7

Compliance with Laws

1.6, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4, 10.2.2,
11.1, 11.3, 13.1, 13.4, 13.5.1, 13.5.2, 13.6, 14.1.1,
14.2.1.3, 15.2.8, 15.4.2, 15.4.3

Concealed or Unknown Conditions

3.7.4, 4.2.8, 8.3.1, 10.3

Conditions of the Contract

1.1.1, 6.1.1, 6.1.4

Consent, Written

3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.8.5, 9.9.1,
9.10.2, 9.10.3, 11.3.1, 13.2, 13.4.2, 15.4.4.2

Consolidation or Joinder

15.4.4

**CONSTRUCTION BY OWNER OR BY
SEPARATE CONTRACTORS**

1.1.4, 6

Construction Change Directive, Definition of
7.3.1

Construction Change Directives

1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, 7.3,
9.3.1.1

Construction Schedules, Contractor's

3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2

Contingent Assignment of Subcontracts

5.4, 14.2.2.2

Continuing Contract Performance

15.1.3

Contract, Definition of

1.1.2

**CONTRACT, TERMINATION OR
SUSPENSION OF THE**

5.4.1.1, 11.3.9, 14

Contract Administration

3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating
to

3.7.1, 3.10, 5.2, 6.1, 11.1.3, 11.3.6, 11.4.1

Contract Documents, Copies Furnished and Use of
1.5.2, 2.2.5, 5.3

Contract Documents, Definition of

1.1.1

Contract Sum

3.7.4, 3.8, 5.2.3, 7.2, 7.3, 7.4, 9.1, 9.4.2, 9.5.1.4,
9.6.7, 9.7, 10.3.2, 11.3.1, 14.2.4, 14.3.2, 15.1.4,
15.2.5

Contract Sum, Definition of

9.1

Contract Time

3.7.4, 3.7.5, 3.10.2, 5.2.3, 7.2.1.3, 7.3.1, 7.3.5, 7.4,
8.1.1, 8.2.1, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 14.3.2,
15.1.5.1, 15.2.5

Contract Time, Definition of

8.1.1

CONTRACTOR

3

Contractor, Definition of

3.1, 6.1.2

Contractor's Construction Schedules

3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2

Contractor's Employees

3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1

Contractor's Liability Insurance

11.1

Contractor's Relationship with Separate Contractors and Owner's Forces

3.12.5, 3.14.2, 4.2.4, 6, 11.3.7, 12.1.2, 12.2.4

Contractor's Relationship with Subcontractors

1.2.2, 3.3.2, 3.18.1, 3.18.2, 5, 9.6.2, 9.6.7, 9.10.2, 11.3.1.2, 11.3.7, 11.3.8

Contractor's Relationship with the Architect

1.1.2, 1.5, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.3, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3.7, 12, 13.5, 15.1.2, 15.2.1

Contractor's Representations

3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2

Contractor's Responsibility for Those Performing the Work

3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8

Contractor's Review of Contract Documents

3.2

Contractor's Right to Stop the Work

9.7

Contractor's Right to Terminate the Contract

14.1, 15.1.6

Contractor's Submittals

3.10, 3.11, 3.12.4, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3, 11.1.3, 11.4.2

Contractor's Superintendent

3.9, 10.2.6

Contractor's Supervision and Construction

Procedures

1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.5, 7.3.7, 8.2, 10, 12, 14, 15.1.3

Contractual Liability Insurance

11.1.1.8, 11.2

Coordination and Correlation

1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1

Copies Furnished of Drawings and Specifications

1.5, 2.2.5, 3.11

Copyrights

1.5, 3.17

Correction of Work

2.3, 2.4, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, 12.2

Correlation and Intent of the Contract Documents

1.2

Cost, Definition of

7.3.7

Costs

2.4, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.7, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.3, 12.1.2, 12.2.1, 12.2.4, 13.5, 14

Cutting and Patching

3.14, 6.2.5

Damage to Construction of Owner or Separate Contractors

3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 11.1.1, 11.3, 12.2.4

Damage to the Work

3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 11.3.1, 12.2.4

Damages, Claims for

3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.1.1, 11.3.5, 11.3.7, 14.1.3, 14.2.4, 15.1.6

Damages for Delay

6.1.1, 8.3.3, 9.5.1.6, 9.7, 10.3.2

Date of Commencement of the Work, Definition of

8.1.2

Date of Substantial Completion, Definition of

8.1.3

Day, Definition of

8.1.4

Decisions of the Architect

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 15.2, 6.3, 7.3.7, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.5.2, 14.2.2, 14.2.4, 15.1, 15.2

Decisions to Withhold Certification

9.4.1, 9.5, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance, Rejection and Correction of

2.3, 2.4, 3.5, 4.2.6, 6.2.5, 9.5.1, 9.5.2, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1

Definitions

1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 15.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1

Delays and Extensions of Time

3.2, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7, 10.3.2, 10.4, 14.3.2, 15.1.5, 15.2.5

Disputes

6.3, 7.3.9, 15.1, 15.2

Documents and Samples at the Site

3.11

Drawings, Definition of

1.1.5

Drawings and Specifications, Use and Ownership of

3.11

Effective Date of Insurance

8.2.2, 11.1.2

Emergencies

10.4, 14.1.1.2, 15.1.4

Employees, Contractor's

3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1

Equipment, Labor, Materials or
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3,
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2
Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.2.3, 2.2.5, 3.1, 3.3.1, 3.4.1, 3.5,
3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.5, 8.2,
9.5.1, 9.9.1, 10.2, 10.3, 12.2, 14.2, 14.3.1, 15.1.3
Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2,
10.4, 14.3, 15.1.5, 15.2.5
Failure of Payment
9.5.1.3, 9.7, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2
Faulty Work
(See Defective or Nonconforming Work)
Final Completion and Final Payment
4.2.1, 4.2.9, 9.8.2, 9.10, 11.1.2, 11.1.3, 11.3.1, 11.3.5,
12.3, 14.2.4, 14.4.3
Financial Arrangements, Owner's
2.2.1, 13.2.2, 14.1.1.4
Fire and Extended Coverage Insurance
11.3.1.1
GENERAL PROVISIONS
1
Governing Law
13.1
Guarantees (See Warranty)
Hazardous Materials
10.2.4, 10.3
Identification of Subcontractors and Suppliers
5.2.1
Indemnification
3.17, 3.18, 9.10.2, 10.3.3, 10.3.5, 10.3.6, 11.3.1.2,
11.3.7
Information and Services Required of the Owner
2.1.2, 2.2, 3.2.2, 3.12.4, 3.12.10, 6.1.3, 6.1.4, 6.2.5,
9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.4, 13.5.1,
13.5.2, 14.1.1.4, 14.1.4, 15.1.3
Initial Decision
15.2
Initial Decision Maker, Definition of
1.1.8
Initial Decision Maker, Decisions
14.2.2, 14.2.4, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5
Initial Decision Maker, Extent of Authority
14.2.2, 14.2.4, 15.1.3, 15.2.1, 15.2.2, 15.2.3, 15.2.4,
15.2.5
Injury or Damage to Person or Property
10.2.8, 10.4
Inspections
3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,
9.9.2, 9.10.1, 12.2.1, 13.5
Instructions to Bidders
1.1.1
Instructions to the Contractor
3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.5.2

Instruments of Service, Definition of
1.1.7
Insurance
3.18.1, 6.1.1, 7.3.7, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 11
Insurance, Boiler and Machinery
11.3.2
Insurance, Contractor's Liability
11.1
Insurance, Effective Date of
8.2.2, 11.1.2
Insurance, Loss of Use
11.3.3
Insurance, Owner's Liability
11.2
Insurance, Property
10.2.5, 11.3
Insurance, Stored Materials
9.3.2
INSURANCE AND BONDS
11
Insurance Companies, Consent to Partial Occupancy
9.9.1
Intent of the Contract Documents
1.2.1, 4.2.7, 4.2.12, 4.2.13, 7.4
Interest
13.6
Interpretation
1.2.3, 1.4, 4.1.1, 5.1, 6.1.2, 15.1.1
Interpretations, Written
4.2.11, 4.2.12, 15.1.4
Judgment on Final Award
15.4.2
Labor and Materials, Equipment
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,
4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3,
9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2
Labor Disputes
8.3.1
Laws and Regulations
1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4, 9.9.1,
10.2.2, 11.1.1, 11.3, 13.1, 13.4, 13.5.1, 13.5.2, 13.6,
14, 15.2.8, 15.4
Liens
2.1.2, 9.3.3, 9.10.2, 9.10.4, 15.2.8
Limitations, Statutes of
12.2.5, 13.7, 15.4.1.1
Limitations of Liability
2.3, 3.2.2, 3.5, 3.12.10, 3.17, 3.18.1, 4.2.6, 4.2.7,
4.2.12, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 10.2.5, 10.3.3,
11.1.2, 11.2, 11.3.7, 12.2.5, 13.4.2
Limitations of Time
2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,
5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,
9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 11.1.3, 11.3.1.5,
11.3.6, 11.3.10, 12.2, 13.5, 13.7, 14, 15
Loss of Use Insurance
11.3.3

Init.

Material Suppliers
1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.6, 9.10.5

Materials, Hazardous
10.2.4, 10.3

Materials, Labor, Equipment and
1.1.3, 1.1.6, 1.5.1, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13,
3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3,
9.5.1.3, 9.10.2, 10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2

Means, Methods, Techniques, Sequences and
Procedures of Construction
3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien
2.1.2, 15.2.8

Mediation
8.3.1, 10.3.5, 10.3.6, 15.2.1, 15.2.5, 15.2.6, 15.3,
15.4.1

Minor Changes in the Work
1.1.1, 3.12.8, 4.2.8, 7.1, 7.4

MISCELLANEOUS PROVISIONS
13

Modifications, Definition of
1.1.1

Modifications to the Contract
1.1.1, 1.1.2, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7,
10.3.2, 11.3.1

Mutual Responsibility
6.2

Nonconforming Work, Acceptance of
9.6.6, 9.9.3, 12.3

Nonconforming Work, Rejection and Correction of
2.3, 2.4, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4,
12.2.1

Notice
2.2.1, 2.3, 2.4, 3.2.4, 3.3.1, 3.7.2, 3.12.9, 5.2.1, 9.7,
9.10, 10.2.2, 11.1.3, 12.2.2.1, 13.3, 13.5.1, 13.5.2,
14.1, 14.2, 15.2.8, 15.4.1

Notice, Written
2.3, 2.4, 3.3.1, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 9.7, 9.10,
10.2.2, 10.3, 11.1.3, 11.3.6, 12.2.2.1, 13.3, 14, 15.2.8,
15.4.1

Notice of Claims
3.7.4, 10.2.8, 15.1.2, 15.4

Notice of Testing and Inspections
13.5.1, 13.5.2

Observations, Contractor's
3.2, 3.7.4

Occupancy
2.2.2, 9.6.6, 9.8, 11.3.1.5

Orders, Written
1.1.1, 2.3, 3.9.2, 7, 8.2.2, 11.3.9, 12.1, 12.2.2.1,
13.5.2, 14.3.1

OWNER
2

Owner, Definition of
2.1.1

Owner, Information and Services Required of the
2.1.2, 2.2, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2,
9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 11.3, 13.5.1,
13.5.2, 14.1.1.4, 14.1.4, 15.1.3

Owner's Authority
1.5, 2.1.1, 2.3, 2.4, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2,
4.1.3, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1,
7.3.1, 8.2.2, 8.3.1, 9.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1,
9.10.2, 10.3.2, 11.1.3, 11.3.3, 11.3.10, 12.2.2, 12.3,
13.2.2, 14.3, 14.4, 15.2.7

Owner's Financial Capability
2.2.1, 13.2.2, 14.1.1.4

Owner's Liability Insurance
11.2

Owner's Relationship with Subcontractors
1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

Owner's Right to Carry Out the Work
2.4, 14.2.2

Owner's Right to Clean Up
6.3

**Owner's Right to Perform Construction and to
Award Separate Contracts**
6.1

Owner's Right to Stop the Work
2.3

Owner's Right to Suspend the Work
14.3

Owner's Right to Terminate the Contract
14.2

**Ownership and Use of Drawings, Specifications
and Other Instruments of Service**
1.1.1, 1.1.6, 1.1.7, 1.5, 2.2.5, 3.2.2, 3.11, 3.17, 4.2.12,
5.3

Partial Occupancy or Use
9.6.6, 9.9, 11.3.1.5

Patching, Cutting and
3.14, 6.2.5

Patents
3.17

Payment, Applications for
4.2.5, 7.3.9, 9.2, 9.3, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1,
14.2.3, 14.2.4, 14.4.3

Payment, Certificates for
4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1,
9.10.3, 13.7, 14.1.1.3, 14.2.4

Payment, Failure of
9.5.1.3, 9.7, 9.10.2, 13.6, 14.1.1.3, 14.2.1.2

Payment, Final
4.2.1, 4.2.9, 9.8.2, 9.10, 11.1.2, 11.1.3, 11.4.1, 12.3,
13.7, 14.2.4, 14.4.3

Payment Bond, Performance Bond and
7.3.7.4, 9.6.7, 9.10.3, 11.4

Payments, Progress
9.3, 9.6, 9.8.5, 9.10.3, 13.6, 14.2.3, 15.1.3

PAYMENTS AND COMPLETION
9

Init.

Payments to Subcontractors
 5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2
 PCB
 10.3.1
Performance Bond and Payment Bond
 7.3.7.4, 9.6.7, 9.10.3, 11.4
Permits, Fees, Notices and Compliance with Laws
 2.2.2, 3.7, 3.13, 7.3.7.4, 10.2.2
PERSONS AND PROPERTY, PROTECTION OF
10
 Polychlorinated Biphenyl
 10.3.1
Product Data, Definition of
3.12.2
Product Data and Samples, Shop Drawings
 3.11, 3.12, 4.2.7
Progress and Completion
 4.2.2, 8.2, 9.8, 9.9.1, 14.1.4, 15.1.3
Progress Payments
 9.3, 9.6, 9.8.5, 9.10.3, 13.6, 14.2.3, 15.1.3
Project, Definition of
1.1.4
 Project Representatives
 4.2.10
Property Insurance
 10.2.5, 11.3
PROTECTION OF PERSONS AND PROPERTY
10
 Regulations and Laws
 1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4, 9.9.1,
 10.2.2, 11.1, 11.4, 13.1, 13.4, 13.5.1, 13.5.2, 13.6, 14,
 15.2.8, 15.4
 Rejection of Work
 3.5, 4.2.6, 12.2.1
 Releases and Waivers of Liens
 9.10.2
 Representations
 3.2.1, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.4.2, 9.5.1,
 9.8.2, 9.10.1
 Representatives
 2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.1, 4.2.2, 4.2.10, 5.1.1,
 5.1.2, 13.2.1
 Responsibility for Those Performing the Work
 3.3.2, 3.18, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10
 Retainage
 9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3
Review of Contract Documents and Field
Conditions by Contractor
 3.2, 3.12.7, 6.1.3
 Review of Contractor's Submittals by Owner and
 Architect
 3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2
 Review of Shop Drawings, Product Data and
 Samples by Contractor
 3.12

Rights and Remedies
 1.1.2, 2.3, 2.4, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1,
 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.2, 12.2.4,
 13.4, 14, 15.4
Royalties, Patents and Copyrights
3.17
 Rules and Notices for Arbitration
 15.4.1
Safety of Persons and Property
 10.2, 10.4
Safety Precautions and Programs
 3.3.1, 4.2.2, 4.2.7, 5.3, 10.1, 10.2, 10.4
Samples, Definition of
3.12.3
Samples, Shop Drawings, Product Data and
 3.11, 3.12, 4.2.7
Samples at the Site, Documents and
3.11
Schedule of Values
 9.2, 9.3.1
 Schedules, Construction
 3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2
 Separate Contracts and Contractors
 1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2
Shop Drawings, Definition of
3.12.1
Shop Drawings, Product Data and Samples
 3.11, 3.12, 4.2.7
Site, Use of
 3.13, 6.1.1, 6.2.1
 Site Inspections
 3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.4.2, 9.10.1, 13.5
 Site Visits, Architect's
 3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.5
 Special Inspections and Testing
 4.2.6, 12.2.1, 13.5
Specifications, Definition of
1.1.6
Specifications
 1.1.1, 1.1.6, 1.2.2, 1.5, 3.11, 3.12.10, 3.17, 4.2.14
 Statute of Limitations
 13.7, 15.4.1.1
 Stopping the Work
 2.3, 9.7, 10.3, 14.1
 Stored Materials
 6.2.1, 9.3.2, 10.2.1.2, 10.2.4
Subcontractor, Definition of
5.1.1
SUBCONTRACTORS
5
 Subcontractors, Work by
 1.2.2, 3.3.2, 3.12.1, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2,
 9.6.7
Subcontractual Relations
 5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1

init.

Submittals
 3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.7, 9.2, 9.3,
 9.8, 9.9.1, 9.10.2, 9.10.3, 11.1.3
 Submittal Schedule
 3.10.2, 3.12.5, 4.2.7
 Subrogation, Waivers of
 6.1.1, 11.3.7
 Substantial Completion
 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3,
 12.2, 13.7
 Substantial Completion, Definition of
 9.8.1
 Substitution of Subcontractors
 5.2.3, 5.2.4
 Substitution of Architect
 4.1.3
 Substitutions of Materials
 3.4.2, 3.5, 7.3.8
 Sub-subcontractor, Definition of
 5.1.2
 Subsurface Conditions
 3.7.4
 Successors and Assigns
 13.2
 Superintendent
 3.9, 10.2.6
 Supervision and Construction Procedures
 1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4,
 7.1.3, 7.3.7, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.3
 Surety
 5.4.1.2, 9.8.5, 9.10.2, 9.10.3, 14.2.2, 15.2.7
 Surety, Consent of
 9.10.2, 9.10.3
 Surveys
 2.2.3
 Suspension by the Owner for Convenience
 14.3
 Suspension of the Work
 5.4.2, 14.3
 Suspension or Termination of the Contract
 5.4.1.1, 14
 Taxes
 3.6, 3.8.2.1, 7.3.7.4
 Termination by the Contractor
 14.1, 15.1.6
 Termination by the Owner for Cause
 5.4.1.1, 14.2, 15.1.6
 Termination by the Owner for Convenience
 14.4
 Termination of the Architect
 4.1.3
 Termination of the Contractor
 14.2.2
**TERMINATION OR SUSPENSION OF THE
 CONTRACT**
14

Tests and Inspections
 3.1.3, 3.3.3, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2,
 9.10.1, 10.3.2, 11.4.1, 12.2.1, 13.5
TIME
8
Time, Delays and Extensions of
 3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7,
 10.3.2, 10.4, 14.3.2, 15.1.5, 15.2.5
 Time Limits
 2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2,
 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,
 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 11.1.3, 12.2, 13.5,
 13.7, 14, 15.1.2, 15.4
Time Limits on Claims
 3.7.4, 10.2.8, 13.7, 15.1.2
 Title to Work
 9.3.2, 9.3.3
Transmission of Data in Digital Form
1.6
**UNCOVERING AND CORRECTION OF
 WORK**
12
Uncovering of Work
12.1
 Unforeseen Conditions, Concealed or Unknown
 3.7.4, 8.3.1, 10.3
 Unit Prices
 7.3.3.2, 7.3.4
 Use of Documents
 1.1.1, 1.5, 2.2.5, 3.12.6, 5.3
Use of Site
 3.13, 6.1.1, 6.2.1
Values, Schedule of
 9.2, 9.3.1
 Waiver of Claims by the Architect
 13.4.2
 Waiver of Claims by the Contractor
 9.10.5, 13.4.2, 15.1.6
 Waiver of Claims by the Owner
 9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.4.2, 14.2.4, 15.1.6
 Waiver of Consequential Damages
 14.2.4, 15.1.6
 Waiver of Liens
 9.10.2, 9.10.4
Waivers of Subrogation
 6.1.1, 11.3.7
Warranty
 3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.4, 12.2.2, 13.7
 Weather Delays
 15.1.5.2
Work, Definition of
1.1.3
 Written Consent
 1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.8.5,
 9.9.1, 9.10.2, 9.10.3, 11.4.1, 13.2, 13.4.2, 15.4.4.2
 Written Interpretations
 4.2.11, 4.2.12

Init.

Written Notice

2.3, 2.4, 3.3.1, 3.9, 3.12.9, 3.12.10, 5.2.1, 8.2.2, 9.7,
9.10, 10.2.2, 10.3, 11.1.3, 12.2.2, 12.2.4, **13.3**, 14,
15.4.1

Written Orders

1.1.1, 2.3, 3.9, 7, 8.2.2, 12.1, 12.2, 13.5.2, 14.3.1,
15.1.2

Init.

/

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them ~~as being necessary to produce the indicated results or from prevailing custom or trade usage as being required to produce the intended result whether or not specifically called for at no additional cost to the Owner.~~

§ 1.2.1.1 Should any conflict be found in the Contract Documents, the Architect/Engineer shall interpret or construe the Contract Documents so as to secure the most substantial and complete performance of the Work. In other words, the better quality or great quantity of work shall be provided in accordance with the Architect/Engineer's interpretation. The Architect/Engineer's decision in this matter shall be final.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 Wherever in the Contract Documents the words "as approved", "as directed", "as required", "acceptable", "satisfactory" and words of like import are used with references to the Work or its performance, and without further qualification, it shall mean as approved, as directed, as required by the Architect/Engineer and acceptable, satisfactory, etc. to the Architect/Engineer.

§ 1.2.5 The general character of the detailed work is shown on the Drawings, but minor modifications may be made on the shop drawings or mock-ups. Any details shall be worked out in relation to their location and their connection to other parts of the Work. Where on any drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out also apply to all other like portions of the Work. Where details or conditions are indicated but started only, such details or conditions shall be continued throughout the courses or parts in which they occur and shall also apply to all other similar parts in the Work unless otherwise indicated or specifically noted.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

Wherever the term "Architect" appears in this Agreement, it shall mean either Architect or Engineer.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The drawings, specifications and other documents, including those in electronic form, prepared by the Architect and the Architect's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the drawings, specifications and other documents prepared by the Architect or the Architect's consultants, and unless otherwise indicated the Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, them, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, in addition to the copyrights. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. The drawings, specifications and other documents prepared by the Architect and the Architect's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. As such, the City is hereby declared sole-owner of these documents in regards to this Project and will abide by the limitations described in Subparagraph 1.5.1. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. are authorized to use and reproduce applicable portions of the drawings, specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the drawings, specifications and other documents prepared by

Init.

the Architect and the Architect's consultants.. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

~~§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.~~

§ 1.5.2. Intentionally Omitted.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

~~§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.~~

§ 2.2.1. Intentionally Omitted.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. Unless otherwise specified, the following applies:

a. Water line taps, construction of pits for water taps and meter, and restoration of the area to its original condition shall be performed by the Contractor at its expense. Only new water meters shall be installed by City forces at the expense of project sponsor (i.e. the City or private developer). All the aforementioned shall be coordinated by the Contractor.

b. Sanitary taps and cleanouts shall be done by the Contractor or its Subcontractor at the Contractor's expense. HRSD tap fees will be paid by the Owner.

c. For gas and electrical work and associated meter installations, the Contractor shall be responsible for complete coordination of work with utilities, including provision of all necessary labor, equipment, and materials as required in the Contract Documents as well as payment of all resulting costs to aforesaid Work.

d. For telephone and cables, the Contractor shall be responsible for coordination of telephone trunk lines and cable installation with telephone/television company to the "point of penetration" to the facility, including provision of all necessary labor, equipment, and materials as required in the Contract Documents as well as payment of resulting costs to all aforesaid work.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the ~~Owner~~ Owner, subject to Subparagraph 3.74, but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.3.1 The Contractor shall be responsible for protecting pins, stakes, marks, hubs, and control points. Replacement of damaged or destroyed pins, stakes, marks, hubs or control points shall be conducted under the supervision of a surveyor licensed in the Commonwealth of Virginia, if required by the City, and at the Contractor's expense. The Contractor shall coordinate with the Survey Division of the Department of Public Works (664-4645) prior to resetting of points and shall provide certified documentation to include the reference/recovery sheet with swing ties for new benchmarks.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.(1) CD containing the drawings, specifications, and addendums, in PDF format, free of charge.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. ~~Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect.~~ ~~failure.~~ If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. Any failure by the Contractor to acquaint himself with such information shall not relieve him from the responsibility for successfully performing the Work.

.1 Dimensions of Work shall not be determined by scale or rule, but figured dimensions shall be used at all times.

.2 The Contractor shall verify all dimensions by measurement at the jobsite, and shall take any and all other measurements necessary to verify the drawings and to properly layout the Work.

.3 The study of the Contract Documents by the Contractor shall be made sufficiently in advance of the actual layout of the work so as to allow the Contract Documents to be interpreted or modified by the Architect.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Architect in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, or for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities. Documents unless the Contractor recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Architect.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means,

methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

a. Substituted Materials. Request for approval of any substituted material and equipment for those specified or shown on the drawings shall be made in writing to the Engineer within 30 days after award of the Contract. If this request is not submitted, the Engineer reserves the right to have the Contractor furnish the material and equipment definitely specified or shown on the plans. The Contractor shall show, in writing, the monetary savings, improvement in quality, time savings, and other factors to be gained from the proposed substitute. Approval of substitute materials and equipment will be at the sole discretion of the Engineer.

b. Or Equal. It is not the intent of these specifications to exclude or omit products or any responsible manufacturer, if said products are equal in every respect to those mentioned herein. Whenever an article, or any class of materials is specified by trade name or byname of any particular patentee, manufacturer or dealer, it shall be taken as intending to mean equal thereto in quality, finish, size, durability and equally as serviceable for the purpose for which it is or they intended. Request for approval of any "equal" material or product for those specified or shown on the drawings shall be made in writing to the Engineer within 30 days after award of the Contract. If this request is not submitted, the Engineer reserves the right to have the Contractor furnish the material and products definitely specified and shown on the plans. The Contractor shall show, in writing, that the material or product being proposed is equal in every respect to that specified and shall provide all necessary supporting documentation requested by the Engineer. The quality shall be determined by the Engineer, and he alone shall be sole judge as to what materials or services will be accepted as equal. No substitution of materials, methods or services specified shall be made without written approval from the Engineer.

c. Materials and Equipment Manufacturer's Recommendation. All materials, equipment or other items specified by trade or manufacturer's name shall be handled, installed, erected or connected in strict conformity with the manufacturer's recommendations and/or specifications. By making requests for substitutions, the Contractor:

1. Represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;

2. Represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;

3. Certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs and time extensions related to the substitution which may subsequently become apparent; and

Init.

4. Will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded. The Contractor shall be advised that there is NO permit fee for new construction, additions, etc. for CITY-OWNED BUILDINGS. Before final payment is made on the Project, Contractor shall demonstrate that the necessary inspections, certificates of occupancy, clearance, and/or acceptance from the City, State, Federal, and/or private entities/organizations such as from the City's Building Official, Corps of Engineers, Department of Environmental Quality, etc. have been obtained.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed ~~and in no event later than 21 days after first observance of the conditions.~~ disturbed, Contractor shall not disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so "except in an emergency as required by Paragraph 10.4.. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. With respect to unforeseen Work that is paid on a Unit Price Basis, any adjustment in quantity and Contract price will be determined by the Architect/Engineer subject to the provisions of Subparagraph 15.1.5.3. Architect/Engineer will review with the Contractor the Architect/Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or

Init.

otherwise). If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.4.1 Possible Price and Times Adjustments. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Terms if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner in respect to Contract price and Contract times by the submission of a Bid or becoming bound under a negotiated contract; or

b. The existence of such condition could reasonably have been discovered or revealed as a result of examination, investigation, exploration, test, or study of the Site and contiguous areas required by the bidding requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give written notice within the time and as required by Subparagraph 3.7.4.

§ 3.7.4.2 Subsurface and Physical Conditions. The Contract Documents identify:

a. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that the Architect/Engineer has used in preparing the Contract Documents.

b. Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that the Architect/Engineer has used in preparing the Contract Documents.

§ 3.7.4.3 Limited Reliance by Contractor on Technical Data Authorized. Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data", if any, shall be identified in Supplementary General Conditions. Contractor may not rely upon or make any claim against Owner, Architect/Engineer, or any of the Architect/Engineer's consultants with respect to:

a. The completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by the Contractor, and safety precautions and programs incident thereto; or

b. Any Contractor interpretation of or conclusion drawing from any "technical data" or any such data, interpretations, opinions, or information.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2. The Contractor shall attach with monthly invoices the original copy of sales invoices/receipts for materials or equipment that are covered under allowances.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness in sufficient time to avoid delay in the Work..

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

1. The superintendent shall not be changed except with the consent of the Owner, unless the superintendent ceases to be in the Contractor's employ.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, and prior to mobilization or proceeding with any work on site, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.9.4 A qualified General Superintendent shall be present on the project site whenever work is being performed, unless otherwise authorized in writing by the Owner. The Contractor shall notify the Owner whenever the superintendent will be absent for four hours or more. This notification shall include the name of the designated substitute. Any substitute shall be familiar with the project and have the same authority of the primary superintendent. Verbal notification is acceptable for periods less than one full workday.

1. The qualified General Superintendent shall remain on site each day throughout all work days whenever contract work is performed through the punch list period and until all punch list items are complete. Lack of supervision shall constitute a reduction in the Contract Amount of General Conditions, Supervision, or other category which solely represents at the General Contractor's work responsibility, in the amount of \$250.00 per day, or any portion of a day, based on the amount indicated.

§ 3.9.5 The superintendent shall serve as a day to day point of contact on the Project for the Owner and shall, as a minimum, have the authority to:

- a. Act on behalf of the Contractor;
- b. Direct the work of Subcontractors;
- c. Respond to directed changes in the schedule;
- d. Provide detailed updates to and respond to inquiries from the Owner on the progress of the work;
- e. Act upon verbal and written notification of non-conforming work;

Init.

f. Respond to any complaints regarding the conduct or actions of any employee of the Contractor or any Subcontractor.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. At the Pre-Construction Conference, the Contractor shall submit to the Engineer for its timely review a preliminary construction schedule indicating the times (number of days or dates) for starting and completing the various stages of the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

1. The progress schedule shall be in the form of a bar graph and shall identify each major or critical activity. The progress schedule shall be updated monthly. Five (5) copies of the updated progress schedule shall be submitted with each Application for Payment.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

1. Reproduction of the Contract Drawings, or any portion thereof, shall not be acceptable.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal

schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

The Contractor, within 15 days from the Notice to Proceed, shall submit to the Engineer for approval, a complete schedule of submittals for shop drawings and technical and/or engineering data sheets covering all items and equipment for this Contract as listed in each respective division. Submit for approval six (6) copies of certified Shop Drawings and technical data sheets plus sufficient copies for Contractor's use. Approval of the above submissions shall not relieve the Contractor from complying with the drawings and specifications, nor shall such approval be construed as a guarantee of the accuracy of dimensions or other covered items. The Engineer shall endeavor to process all drawings, data sheets, etc., within 21 calendar days of receipt unless impractical. Except for construction schedule and schedule of values that need to be turned over directly to the City for review/approval, the Contractor shall forward all other submittals for review/approval to only one clearing house. The City will notify the Contractor during the Pre-Construction Conference where to send these submittals.

1. Unless otherwise directed or specified, samples shall be submitted in duplicate. Samples shall be properly labeled, bearing the name and quality of material, name of the manufacturer, name of Project, name of the Contractor and the date of submission.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, ~~or will do so and~~ (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. All copies of Shop Drawings submitted for approval shall bear the following statement: "Checked and certified correct for conformance with Contract Documents." This statement shall be dated and signed by the Contractor and shall appear on each submittal. One copy of each approved submittal shall be kept at job site at all times.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

1. The Contractor shall furnish to the field as many prints of the approved Shop Drawings as may be required.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear

such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.14.3 UNDERGROUND UTILITY DAMAGE PREVENTION ACT

The Contractor shall be required and agrees to comply with all the provisions of the Virginia Underground Utility Damage Prevention Act (Section 56-265.14, et seq. Code of Virginia, 1950, as amended) and hereby agrees to hold the City of Norfolk harmless against any loss, damages or claims of any nature whatsoever arising out of the Contractor's failure to comply with the requirements of said Act.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project. In addition, immediately after the completion of the Work, or any portion thereof, the Contractor shall restore the facility, street, and surrounding area to a condition as clean as before the Work was begun. The drainage system shall also be inspected and cleaned by the Contractor. If done by the City or its agents, any expense the City may incur will be charged against the Contractor and deducted before Final Payment is made. The Contractor will be required to back fill along the edges of the sidewalks, driveways and curbs where settlement has occurred, and reshape and reslope where directed. Site must be maintained regularly according to State and City regulations, including regular grass cutting. During the progress of the Work, the sidewalks and portions of the streets adjoining the Work, or in its vicinity, must not be obstructed or littered, and the adjacent sidewalks and gutters must be kept clean as directed by the Engineer.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the costs thereof shall be charged to the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but

Init.

shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that which would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.1.1 The requirements of this Paragraph 3.18 shall be incorporated into the Contractor's insurance policies in a manner approved by the Owner.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

~~§ 4.1.1 The Owner shall retain an architect~~ architect is the person lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. ~~That person or entity is identified as the Architect identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number.~~ The term "Architect" means the Architect or the Architect's authorized representative.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

~~§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.~~

§ 4.1.3. Intentionally Omitted.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 As the Owner's Project representative, the Consulting Architect/Engineer's duties, responsibilities and limitations of authority shall be presented during the Pre-Construction Conference. The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.1.1 Engineer – An individual or entity having an Agreement with the Owner to furnish services as Owner's independent professional consultant with respect to the Project and who is identified as such in the Agreement.

§ 4.2.2 ~~The Architect~~ Architect, as a representative of the Owner, will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, ~~to become generally familiar with the the Contractor's~~

operations (1) to become familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that (2) to endeavor to guard the Owner against defects and deficiencies in the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will ~~not~~ neither have control over, charge of, or responsibility nor be responsible for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and

Init.

assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

§ 4.2.15 **PRE-CONSTRUCTION CONFERENCE.** Before starting the Work, the Architect/Engineer/Owner will schedule a conference to review the requirements on such matters as Project supervision and on-site inspection, Shop Drawing schedules and submission, progress schedules and reports, payrolls, payments to contractors, contract change orders, insurance, safety, labor provisions and equal opportunity in employment and any other items pertinent to the Project. Present at the conference will be the Architect/Engineer, Owner, Project Representative, the Contractor, and its Superintendent for the project.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, ~~as soon as practicable within 15 days~~ after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for ~~each principal portion of the Work~~. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

Init.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. ~~If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.~~ objection..

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect ~~Architect~~, upon written notice of such intent, makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- 1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- 2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

~~When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.~~

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

~~§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.~~

§ 5.4.3. Intentionally Omitted.

§ 5.5 SUBCONTRACTORS COORDINATION OF WORK

Every subcontractor performing work that affects others shall provide for all requirements of the other trades, notwithstanding the Contractor's responsibility to coordinate the Work. Should the work provided by unsuitable for the application of work by any other subcontractor, the subcontractor shall notify the Contractor and the Engineer in writing immediately. The Contractor is required to forward a copy of correspondence from his subcontractors providing notice of unsuitable work.

Init.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. ~~If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.~~
subrogation..

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

Init.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement ~~among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or between the Owner and Contractor; a Construction Change Directive~~ may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.1.4 Modifications shall be in compliance with the Code of the City of Norfolk, Virginia, Chapter 33.1.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 ~~Unit prices stated in the Contract Documents or subsequently agreed upon; Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Architect/Engineer's recommendation to the City as follows:~~

Architect/Engineer will review with Contractor the Architect/Engineer's preliminary determinations on such matters before rendering a written recommendation thereon (by endorsement of an Application for Payment or otherwise). City's written decision thereon (by approval of Application for Payment or otherwise) will be final and binding (except as modified by Architect/Engineer to reflect changed factual conditions or more accurate data) upon Contractor, subject to the provisions of Paragraph 7.3.4.

Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably ~~adjusted~~ adjusted provided that there is no corresponding adjustment with respect to any other item of Work.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work, and Overhead and profit costs, except where such costs have been determined by means of Paragraph 7.3.3.2 above, wherein such costs are included in the unit prices, shall be determined as follows:

Fifteen percent (15%) of the costs determined above shall be paid for overhead and profit of the Contractor or subcontractor(s) actually performing the work, including, but not limited to, field and home office expense, superintendent, taxes, subsistence expenses of any nature, premiums on bonds, insurance, and all other costs and expenses as determined by the City.

In the event the work is performed by a subcontractor or subcontractors, the Contractor shall be paid ten percent (10%) of the total costs determined above, excluding the subcontractor's or subcontractors' overhead and profit, to cover and compensate the Contractor for its overhead and profit;

- .5 Additional costs of supervision and field office personnel directly attributable to the change.
Intentionally Omitted.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the ~~Architect~~ Architect plus overhead and profit to actual net cost. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may not request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15. Contractor may only include the amounts of fully executed Change Orders in the Applications for Payment.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; Owner; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

Based upon Applications for Payment submitted to the Engineer by the Contractor and certificates for payment issued by the Engineer, the City shall make monthly progress payments on account of the Contract Sum to the Contractor as provided in these General Conditions of the Contract for Construction as follows:

The City will endeavor to pay the Contractor, on or about the thirtieth (30th) calendar day after receipt of Request for Payment, ninety-five (95%) percent of the portion of the Contract Sum properly allocated to labor, materials and equipment incorporated in the work and ninety-five (95%) percent of the portion of the Contract Sum properly allocated to materials and equipment suitably stored at the site or at some other location agreed upon in writing by the parties, less the aggregate of previous payments in each case; provided however, the City, at any time after fifty (50%) percent of the work has been completed, if it finds that satisfactory progress is being made, may in its sole discretion make any of the remaining partial payments in full. Also, upon Substantial Completion of the work, the City may increase total payment to one hundred (100%) percent of the Contract sum, less such retainage as the Engineer shall determine for incomplete work and unsettled claims. But such full payment or payments shall in no manner be construed as reducing the amount of the bond or the liability of the Surety thereon, until Final Completion and acceptance of all lines of work herein set forth. Final Payment shall be made upon completion of all work and acceptance by the Engineer in accordance with the General Conditions.

The action of the Engineer by which the Contractor is to be bound according to the terms of this Contract shall be evidenced by his final estimate and certificate, all prior estimates upon which ninety-five (95%) percent or more may be made, being merely payments on account, and not payments for accepted work, and subject to the corrections of such final estimate, which may be made without notice to the Contractor thereof, or of the measurements upon which the same is based.

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be ~~notarized, if required,~~ certified by an officer of the firm and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may not include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, ~~or by interim determinations of the Architect,~~ but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such

init.

materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.
- .8 failure to comply with obligations under the Contract.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld. The City reserves the right to determine payment made.

Init.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner is obligated to take one of the two following actions within seven (7) days after receipt of amounts paid to the Contractor by the Owner for work performed by any subcontractor under this Agreement:

a. Pay the subcontractor for the proportionate share of the total payment received from the Owner attributable to the work performed by the subcontractor under this Agreement; or

b. Notify the Owner and the subcontractor, in writing, of the Contractor's intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment.

The Contractor is obligated to pay interest to the subcontractor on all amounts owed by the Contractor to the subcontractor that remain unpaid after seven (7) days following receipt by the Contractor of payment from the Owner for work performed by the subcontractor under this Agreement. Unless otherwise provided under the terms of this Agreement, interest shall accrue at the rate of one percent (1%) per month.

The Contractor shall include in each of its subcontracts, if any are permitted, a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor.

The Contractor's obligation to pay an interest charge to a subcontractor pursuant to this section may not be construed to be an obligation of the City. A contract modification or Amendment to the Agreement may not be made for the purpose of providing reimbursement for such interest charge. A cost reimbursement claim may not include any amount for reimbursement for such interest charge.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor. A Subcontractor inquiry for progress payment and other information shall be directed to the City Attorney's office under the Freedom of Information Act.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by

the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

~~If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut down, delay and start-up, plus interest as provided for in the Contract Documents.~~ Intentionally Omitted.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

Init.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. The Contractor shall submit a Contractor's release from liens, claims, security interests or encumbrances along with final invoice. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Contractor shall provide temporary fences, barricades, coverings, or other protection to preserve existing items indicated to remain and to prevent injury or damage to persons or property.

This includes providing protection of the Work, materials, appliances and fixtures against weather, rain, wind, storms, freezing or heat. At the end of the day's work, work likely to be damaged shall be properly protected. For work on existing buildings, the Contractor shall accomplish the work in such a manner that the remainder of the building, and its contents and inhabitants, are fully protected from any weather damage.

The Contractor shall be responsible for ensuring that adequate measures are taken to secure materials and equipment during the progress of the Work to prevent storm-related hazards. It is, therefore, essential that the Contractor take necessary precautions to ensure that openings in the building are monitored carefully. The Contractor shall take immediate actions required to seal of such openings when rain or other detrimental weather is imminent, and at the end of each workday; and ensure that the openings are completely sealed off to protect materials and equipment in the building from damage.

The provisions of this subparagraph take precedence over any similar provisions contained in the technical specifications.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. ~~If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection.~~ Owner. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written ~~agreement of the Owner~~ direction by the City and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

~~§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.~~

§ 10.3.3. Intentionally Omitted.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site ~~unless such materials or substances are required by the Contract Documents.~~ site. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

§ 10.4.1 EMERGENCY CONDITIONS. The issuance of a Declaration of Emergency conditions by any authorized government official may result in the suspension of the Work under the Contract and/or the ordering by the City of additional work. The Contractor shall make available to the City, during the time of the declared emergency, labor and equipment for such services under the terms and conditions of the Contract. Labor and equipment rates shall not exceed FEMA reimbursable rates for the Hampton Roads area. Failure to comply with such emergency directives may result in termination of the Contract by reason of non-compliance.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

See Subparagraphs 3.18.1 and 10.3.1

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 ~~The insurance required by Section 11.1.1 shall be written for not less than limits of liability.~~ All liability policies shall be written in an occurrence form unless otherwise specifically approved by the City.

The Contractor shall secure and maintain in force insurance, including malicious mischief and vandalism, with minimum acceptable amounts described below, naming the City as additional insured during the life of the Contract:

.1	Worker's Compensation	Statutory
	Employer's Liability	\$200,000 per accident injury
.2	Commercial General Liability	Combined single limit \$3,000,000 or
		\$2,000,000 per occurrence
		\$3,000,000 aggregate
		\$3,000,000 products & completed
		Operations

The Commercial General Liability Insurance required above shall include the following extensions of coverage:

- (1) The coverage shall be provided under a Comprehensive form of policy or similar thereto.
- (2) X.C.U. Coverage – If the Contract requires any work procedures involving blasting, excavating, tunneling or other underground work, the liability coverage shall include Standard Blasting or Explosion Coverage, Standard Collapse Coverage and Standard Underground Coverage, commonly referred to as XCU liability coverage with limits of \$500,000 per occurrence and \$1,000,000 aggregate.
- (3) Broad Form Property Damage Endorsement.
- (4) Contractual Liability coverage shall be included.
- (5) Protective Liability coverage shall be included to protect the Contractor against claims arising out of operations performed by its Subcontractors.
- (6) Products Liability and/or Completed Operations coverage shall be included.

.3 Comprehensive Automobile Liability including owned, non-owned and hired vehicles:

Combined Single limit each accident	\$2,000,000
Bodily Injured	\$1,000,000 per person
	\$2,000,000 per occurrence
	\$2,000,000 aggregate
Property Damage	\$500,000 per occurrence

.4 Environmental Impairment Liability Insurance. If applicable, as determined by the City, the Contractor shall procure and maintain during the life of the Contract Environmental Impairment Liability Insurance, which shall protect against all claims and costs including, but not limited to, bodily injury or property damage claims (including clean-up costs) caused by pollution conditions, as herein defined, arising from the contracted work. Pollution conditions means the discharge, dispersal, release or escape of smoke vapor, soot, fumes, acids, alkalis, toxic chemicals, liquids, gases, waste materials or other irritants, contaminants, or pollutants into or upon land, the atmosphere or any watercourse or body of water, which results in bodily injury or property damage. The policy limits will be determined by the City and specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or as prescribed by City, State or Federal law/regulations. Coverages, written on a claims-made basis, shall be maintained without interruption from the date of commencement of the Work until at least one year following the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 All insurance policies required hereunder shall contain an express provision therein, or endorsement attached thereto, worded substantially as follows:

"This is not to be cancelled or become subject to reduction of coverage prior to thirty days after the insured has received written notice mailed to the address noted hereinbefore, as evidenced by return receipt of registered letter."

All insurance certificates and/or policies shall designate the City of Norfolk, its employees, and its agents as "additional insured" regarding the contracted Work.

Certificates of Insurance issued by companies licensed within the Commonwealth of Virginia shall provide the designed insurance.

Contractor shall notify the City in writing within 10 days after receiving notice of any cancellation or reduction in coverage.

Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies

Init.

will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

~~§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.~~ **SUBCONTRACTOR'S INSURANCE.** The Contractor shall require all subcontractors to secure and maintain in force containing the same coverage and amounts as described in Subparagraph 11.1.2.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.
Intentionally Omitted.

§ 11.3 PROPERTY INSURANCE

~~§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.~~ Until the work is completed and accepted by the City, the Contractor shall purchase and maintain a Builder's Risk or property insurance as is appropriate upon the entire work at the Site to the full insurable value thereof.

~~§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.~~

~~§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.~~

~~§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.~~

~~§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.~~

~~§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or~~

Init.

companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.1.1. Intentionally Omitted.

§ 11.3.1.2. Intentionally Omitted.

§ 11.3.1.3. Intentionally Omitted.

§ 11.3.1.4. Intentionally Omitted.

§ 11.3.1.5. Intentionally Omitted.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds. Intentionally Omitted.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

Init.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished. A Performance Bond and Payment Bond Rider is required for all Change Orders that are in the amount of \$100,000 or greater; or, if the aggregate total of multiple Change Orders is equal to or greater than \$100,000.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties

Init.

established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

~~§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.~~

§ 12.2.2.3. Intentionally Omitted.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

Init.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

~~Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.~~ Intentionally Omitted.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law,

but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

~~§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:~~

- ~~.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;~~
- ~~.2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;~~
- ~~.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or~~
- ~~.4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.~~

~~§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.~~

~~§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.~~

~~§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.~~

§ 14.1.1: Intentionally Omitted

- .1 ;
- .2 ;
- .3 ;
- .4 .

§ 14.1.2. Intentionally Omitted.

§ 14.1.3. Intentionally Omitted

§ 14.1.4. Intentionally Omitted

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

Init.

§ 14.2.2 When any of the above reasons exist, the Owner, ~~upon certification by the Initial Decision Maker that sufficient cause exists to justify such action,~~ may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not ~~executed~~executed and costs incurred from this termination.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Decision of Owner. Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision, evaluation and recommendation. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, ~~an initial decision a final decision by the Owner~~ shall be required as a condition precedent to ~~mediation of any Claim litigation of all Claims between the Contractor and Owner~~ arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the ~~Initial Decision Maker~~ Architect with no decision having been ~~rendered, rendered by the Owner.~~ Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not ~~decide-evaluate~~ disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 ~~The Initial Decision Maker Architect~~ will review Claims and within ten days of the receipt of ~~a-the~~ Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) ~~reject-recommend rejection of~~ the Claim in whole or in part, (3) ~~approve-recommend approval of~~ the Claim, (4) ~~suggest-recommend a~~ compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to

Init.

evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will ~~either reject or approve~~ recommend ~~either rejection or~~ approval of the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will ~~render an initial decision~~ recommend approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The ~~initial Owner's~~ decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution subject to mediation or arbitration.

~~§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.~~

~~§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.~~

§ 15.2.6. Intentionally Omitted

§ 15.2.6.1.. Intentionally Omitted.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

~~§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.~~

~~§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

~~§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.~~

~~§ 15.3.1. Intentionally Omitted.~~

~~§ 15.3.2... Intentionally Omitted.~~

~~§ 15.3.3... Intentionally Omitted.~~

§ 15.4 ARBITRATION

~~§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.~~

~~§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.~~

~~§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.~~

~~§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.~~

~~§ 15.4.1... Intentionally Omitted.~~

~~§ 15.4.1.1... Intentionally Omitted.~~

~~§ 15.4.2. Intentionally Omitted.~~

~~§ 15.4.3. Intentionally Omitted.~~

§ 15.4.4 CONSOLIDATION OR JOINDER

~~§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).~~

~~§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.~~

~~§ 15.4.4.1. Intentionally Omitted.~~

~~§ 15.4.4.2... Intentionally Omitted.~~

~~§ 15.4.4.3. Intentionally Omitted.~~

Init.

PART II

1. SCHEDULES AND REPORTS

Contractor shall submit for approval the following items in four (4) copies prior to commencing the Work:

a. A complete, detailed construction progress schedule in weekly increments, showing anticipated start and completion of all sections of the Work. Also, see sections 3.10 and 3.10.1

b. A complete list of Subcontractors

c. A breakdown of the Project contract price for use in processing monthly requisitions.

d. A projection of contract's monthly cash flow requirements for the duration of the Project.

e. The above requirements may be waived for small projects at the discretion of the Engineer.

2. MINORITY PARTICIPATION

The Contractor shall notify the City in writing of the names of any minority and disadvantaged business subcontractors to be used on the Project, including the estimated dollar amount of such subcontract and the minority classification of such subcontractors. A minority and disadvantaged business is one that is at least 51% owned by an Asian American, Black, Hispanic, and American Indian, Eskimo, Aleut, or Female.

3. EROSION & SEDIMENT CONTROL

On construction projects that are required by the City's Erosion & Sediment Control ordinance (City Code Chapter 15) to have an approved erosion and sediment control plan, the Contractor shall be required to implement the approved plan and comply with all conditions of the plan. A copy of the approved plan and the Virginia Erosion and Sediment Control Handbook, (Third Edition, 1992) shall be kept at the City. If the Contractor determines that the approved plan cannot be effectively carried out, the Contractor shall be responsible for notifying the plan approving authority and requesting a plan amendment as provided for in the Virginia Erosion and Sediment Control Law (Code of Virginia Title 10.1, Chapter 5, Article 4, Section 10.1-563C).

4. RIGHT TO AUDIT

For cost-reimbursement contracts, change orders issued for fixed priced contracts or other contracts in excess of \$30,000, which include the provisions of services, the Contractor shall retain all books, records and other documents relative to this Contract for five (5) years after final payment or until audited by the Office of the City Auditors shall have full access to and the right to examine and duplicate any of said materials during said period.

~~§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.~~

Init.

VDOT SUPPLEMENTAL SPECIFICATIONS (SSs), SPECIAL PROVISIONS (SPs) AND SPECIAL PROVISION COPIED NOTES (SPCNs)

Where Virginia Department of Transportation (VDOT) Supplemental Specifications, Special Provisions and Special Provision Copied Notes are used in this contract, the references therein to “the Specifications” shall refer to the *Virginia Department of Transportation Road and Bridge Specifications*, dated 2007 for both imperial and metric unit projects. References to the “Road and Bridge Standard(s)” shall refer to the *Virginia Department of Transportation Road and Bridge Standards*, dated 2008 for both imperial and metric unit projects. References to the “Virginia Work Area Protection Manual” shall refer to the 2011 edition of the *Virginia Work Area Protection Manual with Revision Number 1* incorporated, dated April 1, 2015 for imperial and metric unit projects. References to the “MUTCD” shall refer to the 2009 edition of the *MUTCD with Revision Numbers 1 and 2* incorporated, dated May 2012; and the 2011 edition of the *Virginia Supplement to the MUTCD with Revision Number 1* dated September 30, 2013 for imperial and metric unit projects.

Where the terms “Department”, “Engineer” and “Contract Engineer” appear in VDOT Supplemental Specifications, Special Provisions and Special Provision Copied Notes used in this contract and the VDOT publication(s) that each references, the authority identified shall be in accordance with the definitions in Section 101.02 of the *Virginia Department of Transportation Road and Bridge Specifications*, dated 2007. Authority identified otherwise for this particular project will be stated elsewhere in this contract.

VDOT Supplemental Specifications, Special Provisions and Special Provision Copied Notes used in this contract and the VDOT publication(s) that each reference are intended to be complementary to the each other. In case of a discrepancy, the order of priority stated in Section 105.12 of the *Virginia Department of Transportation Road and Bridge Specifications*, dated 2007 shall apply.

VDOT Special Provision Copied Notes in this contract are designated with “(SPCN)” after the date of each document. VDOT Supplemental Specifications and Special Provision Copied Notes in this contract are designated as such above the title of each document.

The information enclosed in parenthesis “()” at the left of each VDOT Special Provision Copied Note in this contract is file reference information for VDOT use only. The information in the upper left corner above the title of each VDOT Supplemental Specification and VDOT Special Provision in this contract is file reference information for VDOT use only.

The system of measurement to be used in this project is stated elsewhere in this contract. VDOT Supplemental Specifications, Special Provisions and Special Provision Copied Notes containing imperial units of measure with accompanying expressions in metric units shall be referred to hereinafter as “dual unit measurement” documents. Such a “dual unit measurement” is typically expressed first in the imperial unit followed immediately to the right by the metric unit in parenthesis “()” or brackets “[]” where parenthesis is used in the sentence to convey other information. Where a “dual unit measurement” appears in VDOT documents, the unit that applies shall be in

accordance with the system of measurement as stated elsewhere in this contract. The unit shown that is not of the declared unit of measurement is not to be considered interchangeable and mathematically convertible to the declared unit and shall not be used as an alternate or conflicting measurement. Where VDOT Specifications are used for metric unit projects and only imperial units of measurement appear the document, the provision(s) in this contract for imperial unit to metric unit conversion shall apply.

6-10-15 (SPCN)

(c103i01-0814)

SECTION 103—AWARD AND EXECUTION OF CONTRACTS of the Specifications is amended as follows:

Section 103.09—Execution of Contract is amended to include the following:

According to Section 2.2-4308.2 of the *Code of Virginia*, any employer with more than an average of 50 employees for the previous 12 months entering into a contract in excess of \$50,000 with the Department to provide work or provide services pursuant to such contract shall register and participate in the U.S. Department of Homeland Security's "E-Verify" system to verify information and work authorization of its newly hired employees performing work pursuant to such contract.

Contractors are not required to be enrolled with "E-Verify" at the time bids are submitted, however, prior to award, the lowest responsive and responsible bidder must be enrolled with "E-Verify". Contractors may use the following website to enroll in "E-Verify", <http://www.uscis.gov/e-verify>.

8-8-14 (SPCN)

PERSONNEL REQUIREMENTS FOR WORK ZONE TRAFFIC CONTROL - Section 105 and 512 of the Specifications are amended as follows:

Section 105.14—Maintenance During Construction is amended to add the following:

The Contractor shall have at least one person on the project site during all work operations who is currently verified either by the Department's Basic or Intermediate Work Zone Traffic Control training, or by the American Traffic Safety Services Association (ATSSA) Virginia Intermediate Traffic Control Supervisor (TCS) training by a Department approved training provider. This person must have their verification card with them while on the project site. This person shall be responsible for the oversight of work zone traffic control within the project limits in compliance with the Contract requirements, the VWAPM, and the MUTCD. This person's duties shall include the supervision of the installation, adjustment (if necessary), inspection, maintenance, and removal when no longer required, of all work zone traffic control devices on the project.

The Department's Intermediate Work Zone Traffic Control trained person or an ATSSA Virginia Intermediate TCS can oversee multiple/separate work locations but shall be on site within 60 minutes of notification to oversee changes made to temporary traffic control otherwise the Engineer will suspend that maintenance operation until that operation is appropriately staffed in accordance with the requirements herein.

The Contractor shall have at least one person, at a minimum, on the project site who is verified in Basic Work Zone Traffic Control by the Department for each maintenance operation that involves installing, maintaining, or removing work zone traffic control devices. This person shall be responsible for the placement, maintenance and removal of work zone traffic control devices.

In the event none of the Contractor's personnel on the project site have, at a minimum, the required Basic Work Zone Traffic Control verification, the Engineer will suspend that construction/maintenance operation until that operation is appropriately staffed in accordance with the requirements herein.

Section 512.03 Procedures is amended to add (r) **Work Zone Traffic Control** as the following:

- (r) **Work Zone Traffic Control:** The Contractor shall provide individuals trained in Work Zone Traffic Control in accordance with the requirements of Section 105.14 of the Specifications.

Section 512.04 Measurement and Payment is amended to add the following:

Basic Work Zone Traffic Control – Separate payment will not be made for providing a person to meet the requirements of Section 105.14 of the Specifications. The cost thereof shall be included in the price of other appropriate pay items.

Intermediate Work Zone Traffic Control - Separate payment will not be made for providing a person to meet the requirements of Section 105.14 of the Specifications. The cost thereof shall be included in the price of other appropriate pay items.

11-24-15a (SPCN)

(c105hf1-0309) **SECTION 105.06 SUBCONTRACTING** of the Specifications is amended to include the following:

Any distribution of work shall be evidenced by a written binding agreement on file at the project site. Where no field office exists, such agreement shall be readily available upon request to Department inspector(s) assigned to the project.

The provisions contained in Form FHWA-1273 specifically, and other federal provisions included with the prime Contract are generally applicable to all Federal-aid construction projects and must be made a part of, and physically incorporated into all contracts, as well as, appropriate subcontracts for work so as to be binding in those agreements.

12-19-08 (SPCN)

PREDETERMINED MINIMUM WAGE RATES

U.S. DEPARTMENT OF LABOR
OFFICE OF THE SECRETARY
WASHINGTON
DECISION OF THE SECRETARY

This case is before the Department of Labor pursuant to a request for a wage predetermination as required by law applicable to the work described.

A study has been made of wage conditions in the locality and based on information available to the Department of Labor the wage rates and fringe payments listed are hereby determined by the Secretary of Labor as prevailing for the described classes for labor in accordance with applicable law.

This wage determination decision and any modifications thereof during the period prior to the stated expiration date shall be made a part of every contract for performance of the described work as provided by applicable law and regulations of the Secretary of Labor, and the wage rates and fringe payments contained in this decision, including modifications, shall be the minimums to be paid under any such contract and subcontractors on the work.

The contracting officer shall require that any class of laborers and mechanics which is not listed in the wage determination and which is to be employed under the contract, shall be classified or reclassified conformably to the wage determination, and a report of the action taken shall be sent by the Federal agency to the Secretary of Labor. In the event the interested parties cannot agree on the proper classification or reclassification of a particular class of laborers and mechanics to be used, the question accompanied by the recommendation of the contracting officer shall be referred to the Secretary for determination.

Before using apprentices on the job the contractor shall present to the contracting officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U.S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U.S. Bureau of Apprenticeship and Training.

The contractor shall submit to the contracting officer written evidence of the established apprentice-journeyman ratios and wage in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

Fringe payments include medical and hospital care, compensation for injuries or illness resulting from occupational activity, unemployment benefits, life insurance, disability and sickness insurance, accident insurance (all designated as health and welfare), pensions, vacation and holiday pay, apprenticeship or other similar programs and other bona fide fringe benefits.

By direction of the Secretary of Labor

A handwritten signature in black ink, appearing to read "E. Irving Manger", with a stylized flourish at the end.

E. Irving Manger, Associate Administrator
Division of Wage Determinations
Wage and Labor Standards Administration

General Decision Number: VA160129 01/08/2016 VA129

Superseded General Decision Number: VA20150129

State: Virginia

Construction Type: Highway

Counties: Chesapeake*, Isle of Wight, Norfolk*, Portsmouth*, Suffolk* and Virginia Beach* Counties in Virginia.

*INDEPENDENT CITIES

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016

SUVA2013-003 09/20/2013

	Rates	Fringes
ASBESTOS WORKER.....	\$ 12.85	
CARPENTER (STRUCTURE).....	\$ 17.06	
CEMENT MASON/CONCRETE FINISHER...	\$ 17.82	
ELECTRICIAN.....	\$ 24.40	
FORM SETTER.....	\$ 15.00	
IRONWORKER, REINFORCING.....	\$ 19.61	
IRONWORKER, STRUCTURAL.....	\$ 28.80	
LABORER		
Asphalt Raker.....	\$ 15.58	
Construction Laborer I		
(Skilled Laborer).....	\$ 15.57	

Construction Worker II	
(Laborer).....	\$ 12.48
Fence Erector.....	\$ 15.18
Flagger.....	\$ 9.00
Grade Checker.....	\$ 14.50
Guardrail Erector.....	\$ 23.00
Landscape Worker.....	\$ 13.20
Pipe Layer.....	\$ 14.83
Power Tool Operator.....	\$ 17.00
Sign Erector.....	\$ 11.50
 MASON (STRUCTURE).....	 \$ 12.50
 PAINTER.....	 \$ 21.67
 PILEDRIVERMAN.....	 \$ 13.25
 PLUMBER.....	 \$ 16.00
 POWER EQUIPMENT OPERATOR:	
Air Compressor Operator.....	\$ 15.40
Asphalt Distributor.....	\$ 17.57
Asphalt Paver.....	\$ 18.52
Backhoe.....	\$ 18.59
Bulldozer (Utility).....	\$ 16.50
Bulldozer.....	\$ 16.85
Cocrete Paving Machine	
Operator.....	\$ 14.00
Concrete Finish Machine	
Operator.....	\$ 14.00
Concrete Finish Machine	
Screed Operator (Bridge)....	\$ 36.85
Concrete Saw Operator.....	\$ 16.01
Crane, Derrick, Dragline....	\$ 19.23
Drill Operator.....	\$ 15.00
Excavator (Gradall).....	\$ 17.54
Front End Loader.....	\$ 14.27
Hydro Seeder.....	\$ 11.00
Log Skidder Operator.....	\$ 15.00
Mechanic.....	\$ 18.00
Motor Grader (Fine Grade)...	\$ 16.72
Motor Grader (Rough Grade)..	\$ 18.40
Oiler, Greaser.....	\$ 14.00
Pavement Marking Operator...\$	14.00
Pavement Marking Truck	
Operator.....	\$ 23.75
Pavement Planing Groundman..	\$ 16.00
Pavement Planing Operator...\$	17.56
Pile Driver Leadsman.....	\$ 13.25
Pile Driver.....	\$ 15.65
Roller (Finish).....	\$ 16.57
Roller (Rough).....	\$ 16.91
Scraper Pan.....	\$ 11.85
Slurry Seal Paver Machine...\$	17.00
Stabilizer Operator.....	\$ 16.00
Stone-Spreader.....	\$ 15.80
Tractor Operator (Crawlers).\$	12.37
Tractor Operator (Utility)..\$	16.15
Trenching Machine Operator..\$	14.38
Vacuum Machine Operator.....	\$ 13.25

SHEET METAL WORKER.....\$ 18.56

TRAFFIC SIGNALIZATION:

Traffic Signal Installation.....\$ 11.25

TRUCK DRIVER

Fuel & Lubricant Service

Truck Driver.....\$ 11.50

Truck Driver (Multi-Rear
Axle).....\$ 15.89

Truck Driver (Single Rear
Axle).....\$ 13.25

Truck Driver (Tandem Rear
Axle).....\$ 14.31

Truck Driver, Heavy Duty....\$ 16.13

WELDER.....\$ 14.00

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification
and wage rates that have been found to be prevailing for the
cited type(s) of construction in the area covered by the wage
determination. The classifications are listed in alphabetical
order of "identifiers" that indicate whether the particular
rate is a union rate (current union negotiated rate for local),
a survey rate (weighted average rate) or a union average rate
(weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed
in dotted lines beginning with characters other than "SU" or
"UAVG" denotes that the union classification and rate were
prevailing for that classification in the survey. Example:
PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of
the union which prevailed in the survey for this
classification, which in this example would be Plumbers. 0198
indicates the local union number or district council number
where applicable, i.e., Plumbers Local 0198. The next number,
005 in the example, is an internal number used in processing
the wage determination. 07/01/2014 is the effective date of the
most current negotiated rate, which in this example is July 1,
2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the

Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

☐

The following Form **FHWA-1273** titled **REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION CONTRACTS** shall apply to this contract:

FHWA-1273 – Revised May 1, 2012

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

- A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

- 1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The

design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.
4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth

under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

- e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

- a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.
 - b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).
 - c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
 - d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.
7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:
- a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.
 - b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
 - c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.
 - d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. **Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.
9. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.
- a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.
 - b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.
10. **Assurance Required by 49 CFR 26.13(b):**
- a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.
 - b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.
11. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.
- a. The records kept by the contractor shall document the following:
 - (1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;
 - (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and
 - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;
 - b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This

information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. Davis-Bacon and Related Act Provisions

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

- a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are

deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
 - (I) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
 - (II) The classification is utilized in the area by the construction industry; and
 - (II) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

- (4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

- a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship

programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

- b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.
- (2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
 - (I) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
 - (II) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
 - (III) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

- (4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
- c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

- a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. **Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
6. **Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
7. **Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
8. **Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
9. **Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.
10. **Certification of eligibility.**
 - a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. **CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.
3. **Withholding for unpaid wages and liquidated damages.** The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.
4. **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).
 - a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:
 - (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
 - (2) the prime contractor remains responsible for the quality of the work of the leased employees;

- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
 - (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.
- b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.
- 2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
- 3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.
- 4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.
- 5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

- 1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
- 2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards

(29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

- f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

- a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:
 - (1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;
 - (2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local)

transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

- (3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and
- (4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

- b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred,

suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--
Lower Tier Participants:**

- 1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.
- 2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
 - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
 - b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE
EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals for female and minority participation, expressed in percentage terms of the Contractor's aggregate work force in each trade on all construction works in the covered area, are as follows:

Females- 6.9%

Minorities - See Attachment "A"

The goals are applicable to all the Contractor's construction work performed in the covered area, whether or not it is Federal or federally assisted. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications, set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established herein. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executives Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days the award of any construction subcontract in excess of \$10,000 at any tier for construction works under this contract. The notification shall list the name, address and telephone number of the subcontractor, employer identification number, estimated dollar amount of the subcontract, estimated starting and completion dates of the subcontract and the geographical area in which the contract is to be performed.

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)**

1. As, used in this provision:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U. S. Treasury Department Form 941;
 - d. "Minority" includes:

- (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation.
 3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U. S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors and Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
 4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the coverer area. Covered construction Contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
 5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
 6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.
 7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, shall assign two or more women to each construction project. The Contractor shall specifically ensure that all foreman, superintendents and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites in such facilities.
- b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off the street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union, or if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
- d. Provide immediate written notification to the Director when the union or unions which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or women sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper or annual report; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents and General Foremen prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including in any news media advertisement that the Contractor is "An Equal Opportunity Employer" for minority and female, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- i. Directs its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by

recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures and tests to be used in the selection process.

- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of Contractor's workforce.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for such opportunities through appropriate training or other means.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are nonsegregated, except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
9. Goals for women have been established. However, the Contractor IS required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner, that is even though the Contractor has achieved its goals for women, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or nation origin.
11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director will proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate and make known to the Department a responsible official as the EEO Officer to monitor all employment related activity, to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors will not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

ATTACHMENT A

<u>Economic Area</u>	<u>Goal (Percent)</u>
Virginia:	
021 Roanoke-Lynchburg, VA	
SMSA Counties:	
4640 Lynchburg, VA	19.3
VA Amherst; VA Appomattox; VA Campbell; VA Lynchburg	
6800 Roanoke, VA	10.2
VA Botetourt; VA Craig; VA Roanoke; VA Roanoke City; VA Salem	
Non-SMSA Counties	12.0
VA Alleghany; VA Augusta; VA Bath; VA Bedford; VA Bland; VA Carroll;	
VA Floyd; VA Franklin; VA Giles; VA Grayson; VA Henry; VA Highland;	
VA Montgomery; VA Nelson; VA Patrick; VA Pittsylvania; VA Pulaski;	
VA Rockbridge; VA Rockingham; VA Wythe; VA Bedford City; VA Buena	
Vista:	
VA Clifton Forge; VA Covington; VA Danville; VA Galax; VA Harrisonburg;	
VA Lexington; VA Martinsville; VA Radford; VA Staunton; VA Waynesboro;	
WV Pendleton.	
022 Richmond, VA	
SMSA Counties:	
6140 Petersburg - Colonial Heights - Hopewell, VA	30.6
VA Dinwiddie; VA Prince George; VA Colonial Heights; VA Hopewell;	
VA Petersburg.	
6760 Richmond, VA	24.9

VA Charles City; VA Chesterfield; VA Goochland, VA Hanover; VA Henrico; VA New Kent; VA Powhatan; VA Richmond.	
Non-SMSA Counties	27.9
VA Albemarle; VA Amelia; VA Brunswick; VA Buckingham, VA Caroline; VA Charlotte; VA Cumberland; VA Essex; VA Fluvanna; VA Greene; VA Greensville; VA Halifax; VA King and Queen; VA King William; VA Lancaster; VA Louisa; VA Lunenburg; VA Madison; VA Mecklenburg; VA Northumberland; VA Nottoway; VA Orange; VA Prince Edward; VA Richmond VA Sussex; VA Charlottesville; VA Emporia; VA South Boston	
023 Norfolk - Virginia Beach - Newport News VA:	
SMSA Counties:	
5680 Newport News- Hampton, VA	27.1
VA Gloucester; VA James City; VA York; VA Hampton; VA Newport News; VA Williamsburg.	
5720 Norfolk - Virginia Beach - Portsmouth, VA - NC	26.6
NC Currituck; VA Chesapeake; VA Norfolk; VA Portsmouth; VA Suffolk; VA Virginia Beach.	
Non-SMSA Counties	29.7
NC Bertie; NC Camden; NC Chowan; NC Gates; NC Hertford; NC Pasquotank; NC Perquimans; VA Isle of Wight; VA Matthews; VA Middlesex; VA Southampton; VA Surry; VA Franklin.	
Washington, DC:	
020 Washington, DC.	
SMSA Counties:	
8840 Washington, DC - MD - VA	28.0
DC District of Columbia; MD Charles; MD Montgomery MD Prince Georges; VA Arlington; VA Fairfax; VA Loudoun; VA Prince William VA Alexandria; VA Fairfax City; VA Falls Church.	
Non- SMSA Counties	25.2
MD Calvert; MD Frederick; MD St. Marys; MD Washington; VA Clarke; VA Culpeper; VA Fauquier; VA Frederick; VA King George; VA Page; VA Rappahannock; VA Shenandoah; VA Spotsylvania; VA Stafford; VA Warren; VA Westmoreland; VA Fredericksburg; VA Winchester WV Berkeley; WV Grant; WV Hampshire; WV Hardy; WV Jefferson; WV Morgan.	
Tennessee:	
052 Johnson City - Kingsport - Bristol, TN - VA	
SMSA Counties:	
3630 Johnson City - Kingsport -Bristol, TN-VA	2.6
TN Carter; TN Hawkins; TN Sullivan; TN Washington; VA Scott: VA Washington; VA Bristol.	
Non-SMSA Counties	3.2
TN Greene; TN Johnson; VA Buchanan; VA Dickenson; VA Lee; VA Russell; VA Smyth; VA Tazewell; VA Wise; VA Norton; WV McDowell; WV Mercer.	
Maryland:	
019 Baltimore MD	
Non-SMSA Counties	23.6
MD Caroline; MD Dorchester; MD Kent; MD Queen Annes; MD Somerset; MD Talbot; MD Wicomico; MD Worchester; VA Accomack; VA Northampton.	

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 105.06–SUBCONTRACTING
(FEDERAL FUNDED PROJECTS)

August 19, 2015a

SECTION 105.06–SUBCONTRACTING of the Specifications is amended to include the following:

According to Commonwealth of Virginia Executive Order 20, the Contractor is encouraged to seek out and consider Small, Women-owned, and Minority-owned (SWaM) businesses certified by the Department of Small Business and Supplier Diversity (DSBSD) as potential subcontractors and vendors. Further, the Contractor shall furnish and require each subcontractor (first-tier) to furnish information relative to subcontractor and vendor involvement on the project.

For purposes of this provision, the term “vendor” is defined as any consultant, manufacturer, supplier or hauler performing work or furnishing material, supplies or services for the contract. The Contractor and, or subcontractor (first-tier) must insert this provision in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). The applicable requirements of this provision are incorporated by reference for work done by vendors under any purchase order, rental agreement or agreement for other services for the contract. The Contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or vendor.

The submission of a bid will be considered conclusive evidence that the Contractor agrees to assume these contractual obligations and to bind subcontractors contractually to the same at the Contractor's expense.

When an approved Form C-31 “Subletting Request” is required according to IIM-CD-2013-06.01, the Contractor shall indicate on the Subletting Request if a subcontractor is a certified DBE or SWAM business.

The Contractor shall report all SWAM, and Non-SWAM/DBE vendor payments annually on June 30th (if not a business day, then the next business day), and within 30 days after final acceptance of the work, to the District Civil Rights Section. The Contractor shall provide the information in a format consistent with revised Form C-61 Vendor Payment Report, subject to the approval of the Engineer.

DBE Participation and reporting shall be in accordance with the Special Provision for Section 107.15 (Use of Disadvantaged Business Enterprises). The Contractor shall provide the information in a format consistent with Form C-63 Vendor Payment Compliance Report.

If the Contractor fails to provide the required information, the Department may delay final payment according to Specification Section 109.10 of the Specifications.

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
SECTION 107.15

December 10, 2010

Section 107.15 of the Specifications is replaced by the following:

Section 107.15—Use of Disadvantaged Business Enterprises (DBEs)

A. Disadvantaged Business Enterprise (DBE) Program Requirements

Any Contractor, subcontractor, supplier, DBE firm, and contract surety involved in the performance of work on a federal-aid contract shall comply with the terms and conditions of the United States Department of Transportation (USDOT) DBE Program as the terms appear in Part 26 of the Code of Federal Regulations (49 CFR as amended), the USDOT DBE Program regulations; and the Virginia Department of Transportation's (VDOT or the Department) Road and Bridge Specifications and DBE Program rules and regulations.

For the purposes of this provision, Contractor is defined as the Prime Contractor of the contract; and sub-contractor is defined as any DBE supplier, manufacturer, or subcontractor performing work or furnishing material, supplies or services to the contract. The Contractor shall physically include this same contract provision in every supply or work/service subcontract that it makes or executes with a subcontractor having work for which it intends to claim credit.

In accordance with 49 CFR Part 26 and VDOT's DBE Program requirements, the Contractor, for itself and for its subcontractors and suppliers, whether certified DBE firms or not, shall commit to complying fully with the auditing, record keeping, confidentiality, cooperation, and anti-intimidation or retaliation provisions contained in those federal and state DBE Program regulations. By bidding on this contract, and by accepting and executing this contract, the Contractor agrees to assume these contractual obligations and to bind the Contractor's subcontractors contractually to the same at the Contractor's expense.

The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award, administration, and performance of this contract. Failure by the Contractor to carry out these requirements is a material breach of this contract, which will result in the termination of this contract or other such remedy, as VDOT deems appropriate.

All administrative remedies noted in this provision are automatic unless the Contractor exercises the right of appeal within the required timeframe(s) specified herein. Appeal requirements, processes, and procedures shall be in accordance with guidelines stated herein and current at the time of the proceedings. Where applicable, the Department will notify the Contractor of any changes to the appeal requirements, processes, and procedures after receiving notification of the Contractor's desire to appeal.

All time frames referenced in this provision are expressed in business days unless otherwise indicated. Should the expiration of any deadline fall on a weekend or holiday, such deadline will automatically be extended to the next normal business day.

B. DBE Certification

The only DBE firms eligible to perform work on a federal-aid contract for DBE contract goal credit are firms certified as Disadvantaged Business Enterprises by the Virginia Department of Minority Business Enterprise (DMBE) or the Metropolitan Washington Airports Authority (MWAA) in accordance with federal and VDOT guidelines. DBE firms must be certified in the specific work listed for DBE contract goal credit. A directory listing of certified DBE firms can be obtained from the Virginia Department of Minority Business Enterprise and the Metropolitan Washington Airports Authority Internet websites: <http://www.dmbv.virginia.gov/> ; <http://mwaa.com/362.htm>

C. Bank Services

The Contractor and each subcontractor are encouraged to use the services of banks owned and controlled by socially and economically disadvantaged individuals. Such banking services and the fees charged for services typically will not be eligible for DBE Program contract goal credit. Such information is available from the VDOT's Internet Civil Rights Division website: <http://insidevdot/C7/Civil%20Rights/default.aspx>

D. DBE Program-Related Certifications Made by Bidders\Contractors

By submitting a bid and by entering into any contract on the basis of that bid, the bidder/Contractor certifies to each of the following DBE Program-related conditions and assurances:

1. That the management and bidding officers of its firm agree to comply with the bidding and project construction and administration obligations of the USDOT DBE Program requirements and regulations of 49 CFR Part 26 as amended, and VDOT's Road and Bridge Specifications and DBE Program requirements and regulations.
2. Under penalty of perjury and other applicable penal law that it has complied with the DBE Program requirements in submitting the bid, and shall comply fully with these requirements in the bidding, award, and execution of the contract.
3. To ensure that DBE firms have been given full and fair opportunity to participate in the performance of the contract. The bidder certifies that all reasonable steps were, and will be, taken to ensure that DBE firms had, and will have, an opportunity to compete for and perform work on the contract. The bidder further certifies that the bidder shall not discriminate on the basis of race, color, age, national origin, or sex in the performance of the contract or in the award of any subcontract. Any agreement between a bidder and a DBE whereby the DBE promises not to provide quotations for performance of work to other bidders is prohibited.
4. As a bidder, good faith efforts were made to obtain DBE participation in the proposed contract at or above the goal for DBE participation established by VDOT. It has submitted as a part of its bid true, accurate, complete, and detailed documentation of the good faith efforts it performed to meet the contract goal for DBE participation. The bidder, by signing and submitting its bid, certifies the DBE participation information submitted within the stated time thereafter is true, correct, and complete, and that the information provided includes the names of all DBE firms that will participate in the contract, the specific line item(s) that each listed DBE firm will perform, and the creditable dollar amounts of the participation of each listed DBE. The specific line item must reference the VDOT line number and item number contained in the proposal.

5. The bidder further certifies, by signing its bid, it has committed to use each DBE firm listed for the specific work item shown to meet the contract goal for DBE participation. Award of the contract will be conditioned upon meeting these and other listed requirements of 49 CFR Part 26.53 and the contract documents. By signing the bid, the bidder certifies on work that it proposes to sublet; it has made good faith efforts to seek out and consider DBEs as potential subcontractors. The bidder shall contact DBEs to solicit their interest, capability, and prices in sufficient time to allow them to respond effectively, and shall retain on file proper documentation to substantiate its good faith efforts. Award of the contract will be conditioned upon meeting these and other listed requirements of 49 CFR Part 26.53 and the contract documents.
6. Once awarded the contract, the Contractor shall make good faith efforts to utilize DBE firms to perform work designated to be performed by DBEs at or above the amount or percentage of the dollar value specified in the bidding documents. Further, the Contractor understands it shall not unilaterally terminate, substitute for, or replace any DBE firm that was designated in the executed contract in whole or in part with another DBE, any non-DBE firm, or with the Contractor's own forces or those of an affiliate of the Contractor without the prior written consent of VDOT as set out within the requirements of this provision.
7. Once awarded the contract, the Contractor shall designate and make known to the Department a liaison officer who is assigned the responsibility of administering and promoting an active and inclusive DBE program as required by 49 CFR Part 26 for DBEs. The designation and identity of this officer need be submitted only once by the Contractor during any twelve (12) month period at the preconstruction conference for the first contract the Contractor has been awarded during that reporting period. The Department will post such information for informational and administrative purposes at VDOT's Internet Civil Rights Division website.
8. Once awarded the contract, the Contractor shall comply fully with all regulatory and contractual requirements of the USDOT DBE Program, and that each DBE firm participating in the contract shall fully perform the designated work items with the DBE's own forces and equipment under the DBE's direct supervision, control, and management. Where a contract exists and where the Contractor, DBE firm, or any other firm retained by the Contractor has failed to comply with federal or VDOT DBE Program regulations and/or their requirements on that contract, VDOT has the authority and discretion to determine the extent to which the DBE contract regulations and/or requirements have not been met, and will assess against the Contractor any remedies available at law or provided in the contract in the event of such a contract breach.
9. In the event a bond surety assumes the completion of work, if for any reason VDOT has terminated the prime Contractor, the surety shall be obligated to meet the same DBE contract terms and requirements as were required of the original prime Contractor in accordance with the requirements of this specification.

E. Disqualification of Bidder

Bidders may be disqualified from bidding for failure to comply with the requirements of this Special Provision, the contract specifications, and VDOT Road and Bridge Specifications.

F. Bidding Procedures

The following bidding procedures shall apply to the contract for DBE Program compliance purposes:

1. **Contract Goal, Good Faith Efforts Specified:** All bidders evidencing the attainment of DBE goal commitment equal to or greater than the required DBE goal established for the project must submit completed Form C-111, Minimum DBE Requirements, and Form C-48, Subcontractor/Supplier Solicitation and Utilization, as a part of the bid documents.

Form C-111 may be submitted electronically or may be faxed to the Department, but in no case shall the bidder's Form C-111 be received later than 10:00 a.m. the next business day after the time stated in the bid proposal for the receipt of bids. Form C-48 must be received within ten (10) business days after the bid opening.

If, at the time of submitting its bid, the bidder knowingly cannot meet or exceed the required DBE contract goal, it shall submit Form C-111 exhibiting the DBE participation it commits to attain as a part of its bid documents. The bidder shall then submit Form C-49, DBE Good Faith Efforts Documentation, within two (2) business days after the bid opening.

The lowest responsive and responsible bidder must submit its properly executed Form C-112, Certification of Binding Agreement, within three (3) business days after the bids are received. DBEs bidding as prime contractors are not required to submit Form C-112 unless they are utilizing other DBEs as subcontractors.

If, after review of the apparent lowest bid, VDOT determines the DBE requirements have not been met, the apparent lowest successful bidder must submit Form C-49, DBE Good Faith Efforts Documentation, which must be received by the Contract Engineer within two (2) business days after official notification of such failure to meet the aforementioned DBE requirements.

Forms C-48, C-49, C-111, and C-112 can be obtained from the VDOT website at:
<http://vdotforms.vdot.virginia.gov/>

Instructions for submitting Form C-111 can be obtained from the VDOT website at:
http://www.virginiadot.org/business/resources/const/Exp_DB_E_Commitments.pdf

2. **Bid Rejection:** The failure of a bidder to submit the required documentation within the timeframes specified in the **Contract Goal, Good Faith Efforts Specified** section of this Special Provision may be cause for rejection of that bidder's bid.

If the lowest bidder is rejected for failure to submit the required documentation in the specified time frames, the Department may award the work to the next lowest bidder, or re-advertise the proposed work at a later date or proceed otherwise as determined by the Commonwealth.

3. **Good Faith Efforts Described:** In order to award a contract to a bidder that has failed to meet DBE contract goal requirements, VDOT will determine if the bidder's efforts were adequate good faith efforts, and if given all relevant circumstances, those efforts were made actively and aggressively to meet the DBE requirements. Efforts to obtain DBE participation are not good faith efforts if they could not reasonably be expected to produce a level of DBE participation sufficient to meet the DBE Program and contract goal requirements.

Good faith efforts may be determined through use of the following list of the types of actions the bidder may make to obtain DBE participation. This is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts of similar intent may be relevant in appropriate cases:

- (a) Soliciting through reasonable and available means, such as but not limited to, attendance at pre-bid meetings, advertising, and written notices to DBEs who have the capability to perform the work of the contract. Examples include: advertising in at least one daily/weekly/monthly newspaper of general circulation, as applicable; phone contact with a completely documented telephone log, including the date and time called, contact person, or voice mail status; and internet contacts with supporting documentation, including dates advertised. The bidder shall solicit this interest no less than five (5) business days before the bids are due so that the solicited DBEs have enough time to reasonably respond to the solicitation. The bidder shall determine with certainty if the DBEs are interested by taking reasonable steps to follow up initial solicitations as evidenced by documenting such efforts as requested on Form C-49, DBE Good Faith Efforts Documentation.
- (b) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to completely perform all portions of this work in its entirety or use its own forces;
- (c) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner, which will assist the DBEs in responding to a solicitation;
- (d) Negotiating for participation in good faith with interested DBEs;
 - 1. Evidence of such negotiation shall include the names, addresses, and telephone numbers of DBEs that were considered; dates DBEs were contacted; a description of the information provided regarding the plans, specifications, and requirements of the contract for the work selected for subcontracting; and, if insufficient DBE participation seems likely, evidence as to why additional agreements could not be reached for DBEs to perform the work;
 - 2. A bidder using good business judgment should consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and should take a firm's price, qualifications, and capabilities, as well as contract goals, into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not sufficient reason for a bidder's failure to meet the contract goal for DBE participation, as long as such costs are reasonable and comparable to costs customarily appropriate to the type of work under consideration. Also, the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make diligent good faith efforts. Bidders are not, however, required to accept higher quotes from DBEs if the price difference can be shown by the bidder to be excessive, unreasonable, or greater than would normally be expected by industry standards;
- (e) A bidder cannot reject a DBE as being unqualified without sound reasons based on a thorough investigation of the DBE's capabilities. The DBE's standing within its industry, membership in specific groups, organizations, associations, and political or social affiliations, and union vs. non-union employee status are not legitimate causes

for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal for DBE participation;

- (f) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by VDOT or by the bidder/Contractor;
- (g) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services subject to the restrictions contained in these provisions;
- (h) Effectively using the services of appropriate personnel from VDOT and from DMBE; available minority/women community or minority organizations; contractors' groups; local, state, and Federal minority/ women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and utilization of qualified DBEs.

G. Documentation and Administrative Reconsideration of Good Faith Efforts

During Bidding: As described in the **Contract Goal, Good Faith Efforts Specified** section of this Special Provision, the bidder must provide Form C-49, DBE Good Faith Efforts Documentation, of its efforts made to meet the DBE contract goal as proposed by VDOT within the time frame specified in this provision. The means of transmittal and the risk for timely receipt of this information shall be the responsibility of the bidder. The bidder shall attach additional pages to the certification, if necessary, in order to fully detail specific good faith efforts made to obtain the DBE firms participation in the proposed contract work.

However, regardless of the DBE contract goal participation level proposed by the bidder or the extent of good faith efforts shown, all bidders shall timely and separately file their completed and executed forms C-111, C-112, C-48, and C-49, as aforementioned, or face potential bid rejection.

If a bidder does not submit its completed and executed forms C-111, or C-112, when required by this Special Provision, the bidder's bid will be considered non-responsive and may be rejected.

Where the Department upon initial review of the bid results determines the apparent low bidder has failed or appears to have failed to meet the requirements of the **Contract Goal, Good Faith Efforts Specified** section of this Special Provision and has failed to adequately document that it made a good faith effort to achieve sufficient DBE participation as specified in the bid proposal, that firm upon notification of the Department's initial determination will be offered the opportunity for administrative reconsideration before VDOT rejects that bid as non-responsive. The bidder shall address such request for reconsideration in writing to the Contract Engineer within five (5) business days of receipt of notification by the Department and shall be given the opportunity to discuss the issue and present its evidence in person to the Administrative Reconsideration Panel. The Administrative Reconsideration Panel will be made up of VDOT Division Administrators or their designees, none of who took part in the initial determination that the bidder failed to make the goal or make adequate good faith efforts to do so. After reconsideration, VDOT shall notify the bidder in writing of its decision and explain the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so.

If, after reconsideration, the Department determines the bidder has failed to meet the requirements of the contract goal and has failed to make adequate good faith efforts to achieve the level of DBE participation as specified in the bid proposal, the bidder's bid will be rejected.

If sufficient documented evidence is presented to demonstrate that the apparent low bidder made reasonable good faith efforts, the Department will award the contract and reduce the DBE requirement to the actual commitment identified by the lowest successful bidder at the time of its bid. The Contractor is still encouraged to seek additional DBE participation during the life of the contract.

However, such action will not relieve the Contractor of its responsibility for complying with the reduced DBE requirement during the life of the contract or any administrative sanctions as may be appropriate.

During the Contract: If a DBE, through no fault of the Contractor, is unable or unwilling to fulfill his agreement with the Contractor, the Contractor shall immediately notify the Department and provide all relevant facts. If a Contractor relieves a DBE subcontractor of the responsibility to perform work under their subcontract, the Contractor is encouraged to take the appropriate steps to obtain a DBE to perform an equal dollar value of the remaining subcontracted work. In such instances, the Contractor is expected to seek DBE participation towards meeting the goal during the performance of the contract.

If the Contractor fails to conform to the schedule of DBE participation as shown on the progress schedule, or at any point at which it is clearly evident that the remaining dollar value of allowable credit for performing work is insufficient to obtain the scheduled participation, and the Contractor has not taken the preceding actions, the Contractor and any aforementioned affiliates may be subject to disallowance of DBE credit until such time as conformance with the schedule of DBE participation is achieved.

Project Completion: If the Contractor fails upon completion of the project to meet the required participation, the Contractor and any prime contractual affiliates, as in the case of a joint venture, may be enjoined from bidding as a prime Contractor, or participating as a subcontractor on VDOT projects for a period of 90 days.

Prior to enjoinder from bidding or denial to participate as a subcontractor for failure to comply with participation requirements, as provided hereinbefore, the Contractor may submit documentation to the State Construction Engineer to substantiate that failure was due solely to quantitative underrun(s), elimination of items subcontracted to DBEs, or to circumstances beyond their control, and that all feasible means have been used to obtain the required participation. The State Construction Engineer upon verification of such documentation shall make a determination whether or not the Contractor has met the requirements of the contract.

If it is determined that the aforementioned documentation is insufficient or the failure to meet required participation is due to other reasons, the Contractor may request an appearance before the Administrative Reconsideration Panel to establish that all feasible means were used to meet such participation requirements. The decision of the Administrative Reconsideration Panel shall be administratively final. If the decision is made to enjoin the Contractor from bidding on other VDOT work as described herein, the enjoinder period will begin upon the Contractor's failure to request a hearing within the designated time frame or upon the Administrative Reconsideration Panel's decision to enjoin, as applicable.

H. DBE Participation for Contract Goal Credit

DBE participation on the contract will count toward meeting the DBE contract goal in accordance with the following criteria:

1. Cost-plus subcontracts will not be considered to be in accordance with normal industry practice and will not normally be allowed for credit.
2. The applicable percentage of the total dollar value of the contract or subcontract awarded to the DBE will be counted toward meeting the contract goal for DBE participation in accordance with the **DBE Program-Related Certifications Made by Bidders\Contractors** section of this Special Provision for the value of the work, goods, or services that are actually performed or provided by the DBE firm itself or subcontracted by the DBE to other DBE firms.
3. When a DBE performs work as a participant in a joint venture with a non-DBE firm, the Contractor may count toward the DBE goal only that portion of the total dollar value of the contract equal to the distinctly defined portion of the contract work that the DBE has performed with the DBE's own forces or in accordance with the provisions of this Section. The Department shall be contacted in advance regarding any joint venture involving both a DBE firm and a non-DBE firm to coordinate Department review and approval of the joint venture's organizational structure and proposed operation where the Contractor seeks to claim the DBE's credit toward the DBE contract goal.
4. When a DBE subcontracts part of the work of the contract to another firm, the value of that subcontracted work may be counted toward the DBE contract goal only if the DBE's subcontractor at a lower tier is a certified DBE. Work that a DBE subcontracts to either a non-DBE firm or to a non-certified DBE firm will not count toward the DBE contract goal. The cost of supplies and equipment a DBE subcontractor purchases or leases from the prime Contractor or the prime's affiliated firms will not count toward the contract goal for DBE participation.
5. The Contractor may count expenditures to a DBE subcontractor toward the DBE contract goal only if the DBE performs a Commercially Useful Function (CUF) on that contract.
6. A Contractor may not count the participation of a DBE subcontractor toward the Contractor's final compliance with the DBE contract goal obligations until the amount being counted has actually been paid to the DBE. A Contractor may count sixty (60) percent of its expenditures actually paid for materials and supplies obtained from a DBE certified as a regular dealer, and one hundred (100) percent of such expenditures actually paid for materials and supplies obtained from a certified DBE manufacturer.
 - (a) For the purposes of this Special Provision, a regular dealer is defined as a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles, or equipment required and used under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a regular dealer, the DBE firm shall be an established business that regularly engages, as its principal business and under its own name, in the purchase and sale or lease of the products or equipment in question. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions will not be considered regular dealers.
 - (b) A DBE firm may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business where it keeps such items in stock if the DBE both owns and operates distribution equipment for the products it sells and provides for the contract work.

Any supplementation of a regular dealer's own distribution equipment shall be by a long-term lease agreement and not on an *ad hoc* or contract-by-contract basis to be eligible for credit to meet the DBE contract goal.

- (c) If a DBE regular dealer is used for DBE contract goal credit, no additional credit will be given for hauling or delivery to the project site goods or materials sold by that DBE regular dealer. Those delivery costs shall be deemed included in the price charged for the goods or materials by the DBE regular dealer, who shall be responsible for their distribution.
- (d) For the purposes of this Special Provision, a manufacturer will be defined as a firm that operates or maintains a factory or establishment that produces on the premises the materials, supplies, articles, or equipment required under the contract and of the general character described by the project specifications. A manufacturer shall include firms that produce finished goods or products from raw or unfinished material, or purchase and substantially alter goods and materials to make them suitable for construction use before reselling them.
- (g) A Contractor may count toward the DBE contract goal the following expenditures to DBE firms that are not regular dealers or manufacturers for DBE program purposes:
 - 1. The entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of the federal-aid contract, if the fee is reasonable and not excessive or greater than would normally be expected by industry standards for the same or similar services.
 - 2. The entire amount of that portion of the construction contract that is performed by the DBE's own forces and equipment under the DBE's supervision. This includes the cost of supplies and materials ordered and paid for by the DBE for contract work, including supplies purchased or equipment leased by the DBE, except supplies and equipment a DBE subcontractor purchases or leases from the prime Contractor or its affiliates.
- (h) A Contractor may count toward the DBE contract goal one hundred (100) percent of the fees paid to a DBE trucker or hauler for the delivery of material and supplies required on the project job site, but not for the cost of those materials or supplies themselves, provided that the trucking or hauling fee is determined by VDOT to be reasonable, as compared with fees customarily charged by non-DBE firms for similar services. A Contractor shall not count costs for the removal or relocation of excess material from or on the job site when the DBE trucking company is not the manufacturer of or a regular dealer in those materials and supplies. The DBE trucking firm shall also perform a Commercially Useful Function (CUF) on the project and not operate merely as a pass through for the purposes of gaining credit toward the DBE contract goal. Prior to submitting a bid, the Contractor shall determine, or contact the VDOT Civil Rights Division or its district Offices for assistance in determining, whether a DBE trucking firm will meet the criteria for performing a CUF on the project. See section on **Miscellaneous DBE Program Requirements; Factors used to Determine if a DBE Trucking Firm is Performing a CUF.**
- (i) The Contractor will receive DBE contract goal credit for the fees or commissions charged by and paid to a DBE broker who arranges or expedites sales, leases, or other project work or service arrangements provided that those fees are determined by VDOT to be reasonable and not excessive as compared with fees customarily charged by non-DBE firms for similar services. For the purposes of this Special

Provision, a broker is defined as a person or firm that regularly engages in arranging for delivery of material, supplies, and equipment, or regularly arranges for the providing of project services as a course of routine business but does not own or operate the delivery equipment necessary to transport materials, supplies, or equipment to or from a job site.

I. Performing a Commercially Useful Function (CUF)

No credit toward the DBE contract goal will be allowed for contract payments or expenditures to a DBE firm if that DBE firm does not perform a CUF on that contract. A DBE performs a CUF when the DBE is solely responsible for execution of a distinct element of the contract work and the DBE actually performs, manages, and supervises the work involved with the firm's own forces or in accordance with the provisions of the **DBE Participation for Contract Goal Credit** section of this Special Provision. To perform a CUF the DBE alone shall be responsible and bear the risk for the material and supplies used on the contract, selecting a supplier or dealer from those available, negotiating price, determining quality and quantity, ordering the material and supplies, installing those materials with the DBE's own forces and equipment, and paying for those materials and supplies. The amount the DBE firm is to be paid under the contract shall be commensurate with the work the DBE actually performs and the DBE credit claimed for the DBE's performance.

Monitoring CUF Performance: It shall be the Contractor's responsibility to ensure that all DBE firms selected for subcontract work on the contract, for which he seeks to claim credit toward the contract goal, perform a CUF. Further, the Contractor is responsible for and shall ensure that each DBE firm fully performs the DBE's designated tasks with the DBE's own forces and equipment under the DBE's own direct supervision and management or in accordance with the provisions of the **DBE Participation for Contract Goal Credit** section of this Special Provision. For the purposes of this provision the DBE's equipment will mean either equipment directly owned by the DBE as evidenced by title, bill of sale or other such documentation, or leased by the DBE, and over which the DBE has control as evidenced by the leasing agreement from a firm not owned in whole or part by the prime Contractor or an affiliate of the Contractor under this contract.

VDOT will monitor the Contractor's DBE involvement during the performance of the contract. However, VDOT is under no obligation to warn the Contractor that a DBE's participation will not count toward the goal.

DBEs Must Perform a Useful and Necessary Role in Contract Completion: A DBE does not perform a commercially useful function if the DBE's role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

DBEs Must Perform The Contract Work With Their Own Workforces: If a DBE does not perform and exercise responsibility for at least thirty (30) percent of the total cost of the DBE's contract with the DBE's own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involve, VDOT will presume that the DBE is not performing a CUF and such participation will not be counted toward the contract goal.

VDOT Makes Final Determination On Whether a CUF Is Performed: VDOT has the final authority to determine whether a DBE firm has performed a CUF on a federal-aid contract. To determine whether a DBE is performing or has performed a CUF, VDOT will evaluate the amount of work subcontracted by that DBE firm or performed by other firms and the extent of the involvement of other firms' forces and equipment. Any DBE work performed by the Contractor or by employees or equipment of the Contractor shall be subject to disallowance

under the DBE Program, unless the independent validity and need for such an arrangement and work is demonstrated.

J. Verification of DBE Participation and Imposed Damages

Within fourteen days after contract execution, the Contractor shall submit to the Responsible Engineer, with a copy to the District Civil Rights Office (DCRO), a fully executed subcontract agreement for each DBE used to claim credit in accordance with the requirements stated on Form C-112. The subcontract agreement shall be executed by both parties stating the work to be performed, the details or specifics concerning such work, and the price which will be paid to the DBE subcontractor. Because of the commercial damage that the Contractor and its DBE subcontractor could suffer if their subcontract pricing, terms, and conditions were known to competitors, the Department staff will treat subcontract agreements as proprietary Contractor trade secrets with regard to Freedom of Information Act requests. In lieu of subcontract agreements, purchase orders may be submitted for haulers, suppliers, and manufacturers. These too, will be treated confidentially and protected. Such purchase orders must contain, as a minimum, the following information: authorized signatures of both parties; description of the scope of work to include contract item numbers, quantities, and prices; and required federal contract provisions.

The Contractor shall also furnish, and shall require each subcontractor to furnish, information relative to all DBE involvement on the project for each quarter during the life of the contract in which participation occurs and verification is available. The information shall be indicated on Form C-63, DBE and SWAM Payment Compliance Report. The department reserves the right to request proof of payment via copies of cancelled checks with appropriate identifying notations. Failure to provide Form C-63 to the District Civil Rights Office (DCRO) within five (5) business days after the reporting period may result in delay of approval of the Contractor's monthly progress estimate for payment. The names and certification numbers of DBE firms provided by the Contractor on the various forms indicated in this Special Provision shall be exactly as shown on the DMBE's or MWAA's latest list of certified DBEs. Signatures on all forms indicated herein shall be those of authorized representatives of the Contractor as shown on the Prequalification Application, Form C-32 or the Prequalification/Certification Renewal Application, Form C-32A, or authorized by letter from the Contractor. If DBE firms are used which have not been previously documented with the Contractor's bid and for which the Contractor now desires to claim credit toward the project goal, the Contractor shall be responsible for submitting necessary documentation in accordance with the procedures stipulated in this Special Provision to cover such work prior to the DBE beginning work.

Form C-63 can be obtained from the VDOT website at: <http://vdotforms.vdot.virginia.gov/>

The Contractor shall submit to the Responsible Engineer its progress schedule with a copy to the DCRO, as required by Section 108.03 of the Specifications or other such specific contract scheduling specification that may include contractual milestones, i.e., monthly or VDOT requested updates. The Contractor shall include a narrative of applicable DBE activities relative to work activities of the Contractor's progress schedule, including the approximate start times and durations of all DBE participation to be claimed for credit that shall result in full achievement of the DBE goal required in the contract.

On contracts awarded on the basis of good faith efforts, narratives or other agreeable format of schedule information requirements and subsequent progress determination shall be based on the commitment information shown on the latest Form C-111 as compared with the appropriate Form C-63.

Prior to beginning any major component or quarter of the work, as applicable, in which DBE work is to be performed, the Contractor shall furnish a revised Form C-111 showing the name(s) and certification number(s) of any current DBEs not previously submitted who will

perform the work during that major component or quarter for which the Contractor seeks to claim credit toward the contract DBE goal. The Contractor shall obtain the prior approval of the Department for any assistance it may provide to the DBE beyond its existing resources in executing its commitment to the work in accordance with the requirements listed in the **Good Faith Efforts Described** section of this Special Provision. If the Contractor is aware of any assistance beyond a DBE's existing resources that the Contractor, or another subcontractor, may be contemplating or may deem necessary and that have not been previously approved, the Contractor shall submit a new or revised narrative statement for VDOT's approval prior to assistance being rendered.

If the Contractor fails to comply with correctly completing and submitting any of the required documentation requested by this provision within the specified time frames, the Department will withhold payment of the monthly progress estimate until such time as the required submissions are received VDOT. Where such failures to provide required submittals or documentation are repeated the Department will move to enjoin the Contractor and any prime contractual affiliates, as in the case of a joint venture, from bidding as a prime Contractor, or participating as a subcontractor on VDOT projects until such submissions are received.

K. Documentation Required for Semi-final Payment

On those projects nearing completion, the Contractor must submit Form C-63 marked "Semi-Final" within twenty (20) days after the submission of the last regular monthly progress estimate to the DCRO. The form must include each DBE used on the contract work and the work performed by each DBE. The form shall include the actual dollar amount paid to each DBE for the accepted creditable work on the contract. The form shall be certified under penalty of perjury, or other applicable law, to be accurate and complete. VDOT will use this certification and other information available to determine applicable DBE credit allowed to date by VDOT and the extent to which the DBEs were fully paid for that work. The Contractor shall acknowledge by the act of filing the form that the information is supplied to obtain payment regarding a federal participation contract. A letter of certification, signed by both the prime Contractor and appropriate DBEs, will accompany the form, indicating the amount, including any retainage, if present, that remains to be paid to the DBE(s).

L. Documentation Required for Final Payment

On those projects that are complete, the Contractor shall submit a final Form C-63 marked "Final" to the DCRO, within thirty (30) days of the final estimate. The form must include each DBE used on the contract and the work performed by each DBE. The form shall include the actual dollar amount paid to each DBE for the creditable work on the contract. VDOT will use this form and other information available to determine if the Contractor and DBEs have satisfied the DBE contract goal percentage specified in the contract and the extent to which credit was allowed. The Contractor shall acknowledge by the act of signing and filing the form that the information is supplied to obtain payment regarding a federal participation contract.

M. Prompt Payment Requirements

The Contractor shall make prompt and full payment to the subcontractor(s) of any retainage held by the prime Contractor after the subcontractor's work is satisfactorily completed.

For purposes of this Special Provision, a subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished, documented, and accepted as required by the contract documents by VDOT. When VDOT has made partial acceptance of a portion of the prime contract, the Department will consider the work of any subcontractor covered by that partial acceptance to be satisfactorily completed. Payment will

be made in accordance with the requirements of Section 107.01, Section 109.08, and Section 109.09 of the Specifications.

Upon VDOT's payment of the subcontractor's portion of the work as shown on the monthly progress estimate and the receipt of payment by the Contractor for such work, the Contractor shall make compensation in full to the subcontractor for that portion of the work satisfactorily completed and accepted by the Department. For the purposes of this Special Provision, payment of the subcontractor's portion of the work shall mean the Contractor has issued payment in full, less agreed upon retainage, if any, to the subcontractor for that portion of the subcontractor's work that VDOT paid to the Contractor on the monthly progress estimate.

The Contractor shall make payment of the subcontractor's portion of the work within seven (7) days of the receipt of payment from VDOT in accordance with the requirements of Section 107.01, Section 109.08, and Section 109.09 of the Specifications.

If the Contractor fails to make payment for the subcontractor's portion of the work within the time frame specified herein, the subcontractor shall contact the Responsible Engineer and the Contractor's bonding company in writing. The bonding company and VDOT will investigate the cause for non-payment and, barring mitigating circumstances that would make the subcontractor ineligible for payment, ensure payment in accordance with the requirements of Section 107.01, Section 109.08, and Section 109.09 of the Specifications.

By bidding on this contract, and by accepting and executing this contract, the Contractor agrees to assume these contractual obligations, and to bind the Contractor's subcontractors contractually to those prompt payment requirements.

Nothing contained herein shall preclude the Contractor from withholding payment to the subcontractor in accordance with the terms of the subcontract in order to protect the Contractor from loss or cost of damage due to a breach of agreement by the subcontractor.

N. Miscellaneous DBE Program Requirements

Loss of DBE Eligibility: When a DBE firm has been removed from eligibility as a certified DBE firm, the following actions will be taken:

1. When a Bidder/Contractor has made a commitment to use a DBE firm that is not currently certified, thereby making the Contractor ineligible to receive DBE participation credit for work performed, and a subcontract has not been executed, the ineligible DBE firm does not count toward either the contract goal or overall goal. The Contractor shall meet the contract goal with a DBE firm that is eligible to receive DBE credit for work performed, or must demonstrate to the Contract Engineer that it has made good faith efforts to do so.
2. When a Bidder/Contractor has executed a subcontract with a certified DBE firm prior to official notification of the DBE firm's loss of eligibility, the Contractor may continue to use the firm on the contract and shall continue to receive DBE credit toward its DBE goal for the subcontractor's work.
3. When VDOT has executed a prime contract with a DBE firm that is certified at the time of contract execution but that is later ruled ineligible, the portion of the ineligible firm's performance on the contract before VDOT has issued the notice of its ineligibility shall count toward the contract goal.

Termination of DBE: If a certified DBE subcontractor is terminated, or fails, refuses, or is unable to complete the work on the contract for any reason, the Contractor must promptly

request approval to substitute or replace that firm in accordance with this section of this Special Provision.

The Contractor, as aforementioned in **DBE Program-Related Certifications Made by Bidders/Contractors**, shall notify VDOT in writing before terminating and/or replacing the DBE that was committed as a condition of contract award or that is otherwise being used or represented to fulfill DBE contract obligations during the contract performance period. Written consent from the Department for terminating the performance of any DBE shall be granted only when the Contractor can demonstrate that the DBE is unable, unwilling, or ineligible to perform its obligations for which the Contractor sought credit toward the contract DBE goal. Such written consent by the Department to terminate any DBE shall concurrently constitute written consent to substitute or replace the terminated DBE with another DBE. Consent to terminate a DBE shall not be based on the Contractor's ability to negotiate a more advantageous contract with another subcontractor whether that subcontractor is, or is not, a certified DBE.

1. All Contractor requests to terminate, substitute, or replace a certified DBE shall be in writing, and shall include the following information:
 - (a) The date the Contractor determined the DBE to be unwilling, unable, or ineligible to perform.
 - (b) The projected date that the Contractor shall require a substitution or replacement DBE to commence work if consent is granted to the request.
 - (c) A brief statement of facts describing and citing specific actions or inaction by the DBE giving rise to the Contractor's assertion that the DBE is unwilling, unable, or ineligible to perform;
 - (d) A brief statement of the affected DBE's capacity and ability to perform the work as determined by the Contractor;
 - (e) A brief statement of facts regarding actions taken by the Contractor which are believed to constitute good faith efforts toward enabling the DBE to perform;
 - (f) The current percentage of work completed on each bid item by the DBE;
 - (g) The total dollar amount currently paid per bid item for work performed by the DBE;
 - (h) The total dollar amount per bid item remaining to be paid to the DBE for work completed, but for which the DBE has not received payment, and with which the Contractor has no dispute;
 - (i) The total dollar amount per bid item remaining to be paid to the DBE for work completed, but for which the DBE has not received payment, and over which the Contractor and/or the DBE have a dispute.
2. Contractor's Written Notice to DBE of Pending Request to Terminate and Substitute with another DBE.

The Contractor shall send a copy of the "request to terminate and substitute" letter to the affected committed DBE firm, in conjunction with submitting the request to the DCRO. The affected DBE firm may submit a response letter to the Department within two (2) business days of receiving the notice to terminate from the Contractor. The affected DBE firm shall explain its position concerning performance on the committed work. The

Department will consider both the Contractor's request and the DBE's response and explanation before approving the Contractor's termination and substitution request, or determining if any action should be taken against the Contractor.

If, after making its best efforts to deliver a copy of the "request to terminate and substitute" letter, the Contractor is unsuccessful in notifying the affected DBE firm, the Department will verify that the affected, committed DBE firm is unable or unwilling to continue the contract. The Department will immediately approve the Contractor's request for a substitution.

3. Proposed Substitution of Another Certified DBE

Upon termination of a DBE, the Contractor shall use reasonable good faith efforts to replace the terminated DBE. The termination of such DBE shall not relieve the Contractor of its obligations pursuant to this section, and the unpaid portion of the terminated DBE's contract will not be counted toward the contract goal.

When a DBE substitution is necessary, the Contractor shall submit an amended Form C-111 with the name of another DBE firm, the proposed work to be performed by that firm, and the dollar amount of the work to replace the unfulfilled portion of the work of the originally committed DBE firm. The Contractor shall furnish all pertinent information including the contract I.D. number, project number, bid item, item description, bid unit and bid quantity, unit price, and total price. In addition, the Contractor shall submit documentation for the requested substitute DBE as described in this section of this Special Provision.

Should the Contractor be unable to commit the remaining required dollar value to the substitute DBE, the Contractor shall provide written evidence of good faith efforts made to obtain the substitute value requirement. The Department will review the quality, thoroughness, and intensity of those efforts. Efforts that are viewed by VDOT as merely superficial or pro-forma will not be considered good faith efforts to meet the contract goal for DBE participation. The Contractor must document the steps taken that demonstrated its good faith efforts to obtain participation as set forth in the **Good Faith Efforts Described** section of this Special Provision.

Factors Used to determine if a DBE Trucking Firm is performing a CUF:

The following factors will be used to determine whether a DBE trucking company is performing a CUF:

1. To perform a CUF the DBE trucking firm shall be completely responsible for the management and supervision of the entire trucking operation for which the DBE is responsible by subcontract on a particular contract. There shall not be a contrived arrangement, including, but not limited to, any arrangement that would not customarily and legally exist under regular construction project subcontracting practices for the purpose of meeting the DBE contract goal;
2. The DBE must own and operate at least one fully licensed, insured, and operational truck used in the performance of the contract work. This does not include a supervisor's pickup truck or a similar vehicle that is not suitable for and customarily used in hauling the necessary materials or supplies;
3. The DBE receives full contract goal credit for the total reasonable amount the DBE is paid for the transportation services provided on the contract using trucks the DBE owns, insures, and operates using drivers that the DBE employs and manages;

4. The DBE may lease trucks from another certified DBE firm, including from an owner-operator who is certified as a DBE. The DBE firm that leases trucks from another DBE will receive credit for the total fair market value actually paid for transportation services the lessee DBE firm provides on the contract;
5. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of the transportation services provided by non-DBE lessees, *not to exceed the value of transportation services provided by DBE-owned trucks on the contract*. For additional participation by non-DBE lessees, the DBE will only receive credit for the fee or commission it receives as a result of the lease arrangement.

EXAMPLE

DBE Firm X uses two (2) of its own trucks on a contract. The firm leases two (2) trucks from DBE Firm Y and six (6) trucks from non-DBE Firm Z.

		Value of Trans. Serv.
		(For Illustrative Purposes Only)
<u>Firm X</u>		
Truck 1	Owned by DBE	\$100 per day
Truck 2	Owned by DBE	\$100 per day
<u>Firm Y</u>		
Truck 1	Leased from DBE	\$110 per day
Truck 2	Leased from DBE	\$110 per day
<u>Firm Z</u>		
Truck 1	Leased from Non DBE	\$125 per day
Truck 2	Leased from Non DBE	\$125 per day
Truck 3	Leased from Non DBE	\$125 per day
Truck 4	Leased from Non DBE	\$125 per day
Truck 5	Leased from Non DBE*	\$125 per day
Truck 6	Leased from Non DBE*	\$125 per day

DBE credit would be awarded for the total transportation services provided by DBE Firm X and DBE Firm Y, and may also be awarded for the total value of transportation services by four (4) of the six (6) trucks provided by non-DBE Firm Z (not to exceed the value of transportation services provided by DBE-owned trucks).

Credit = 8 Trucks

Total Value of Transportation Services = \$820

In all, full DBE credit would be allowed for the participation of eight (8) trucks (twice the number of DBE trucks owned and leased) and the dollar value attributable to the Value of Transportation Services provided by the 8 trucks.

* With respect to the other two trucks provided by non-DBE Firm Z, DBE credit could be awarded only for the fees or commissions pertaining to those trucks that DBE Firm X receives as a result of the lease with non-DBE Firm Z.

6. For purposes of this section, the lease must indicate that the DBE firm leasing the truck has exclusive use of and control over the truck. This will not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, provided the lease gives the DBE absolute priority for and control over the use of the leased truck. Leased trucks must display the name and identification number of the DBE firm that has leased the truck at all times during the life of the lease.

Data Collection: In accordance with 49CFR Section 26.11, all firms bidding on prime contracts and bidding or quoting subcontracts on federal-aid projects shall provide the following information to the Contract Engineer annually.

- Firm name
- Firm address
- Firm's status as a DBE or non-DBE
- The age of the firm and
- The annual gross receipts of the firm

The means of transmittal and the risk for timely receipt of this information shall be the responsibility of the bidder. However, the above information can be submitted by means of the Annual Gross Receipts Survey as required in the Prequalification/Certification application.

All bidders, including DBE prime Contractor bidders, shall complete and submit to the Contract Engineer the Subcontractor/Supplier Solicitation and Utilization Form C-48 for each bid submitted; to be received within ten (10) business days after the bid opening. Failure of bidders to submit this form in the time frame specified may be cause for disqualification of the bidder and rejection of their bid in accordance with the requirements of this Special Provision, the contract specifications, and VDOT Road and Bridge specifications.

O. Suspect Evidence of Criminal Behavior

Failure of a bidder, Contractor, or subcontractor to comply with the Virginia Department of Transportation Road and Bridge Specifications and these Special Provisions wherein there appears to be evidence of criminal conduct shall be referred to the Attorney General for the Commonwealth of Virginia and/or the FHWA Inspector General for criminal investigation and, if warranted, prosecution.

Suspected DBE Fraud

In appropriate cases, VDOT will bring to the attention of the U. S. Department of Transportation (USDOT) any appearance of false, fraudulent, or dishonest conduct in connection with the DBE program, so that USDOT can take the steps, e.g., referral to the Department of Justice for criminal prosecution, referral to the USDOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules provided in 49CFR Part 31.

P. Summary of Remedies for Non-Compliance with DBE Program Requirements

Failure of any bidder\Contractor to comply with the requirements of this Special Provision for Section 107.15 of the Virginia Road and Bridge Specifications, which is deemed to be a condition of bidding, or where a contract exists, is deemed to constitute a breach of contract shall be remedied in accordance with the following:

1. Disadvantaged Business Enterprise (DBE) Program Requirements

The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award, administration, and performance of this contract. Failure by the Contractor to carry out these requirements is a material breach of this contract, which will result in the termination of this contract or other such remedy, as VDOT deems appropriate.

All administrative remedies noted in this provision are automatic unless the Contractor exercises the right of appeal within the required timeframe(s) specified herein.

2. DBE Program-Related Certifications Made by Bidders\Contractors

Once awarded the contract, the Contractor shall comply fully with all regulatory and contractual requirements of the USDOT DBE Program, and that each certified DBE firm participating in the contract shall fully perform the designated work items with the DBE's own forces and equipment under the DBE's direct supervision, control, and management. Where a contract exists and where the Contractor, DBE firm, or any other firm retained by the Contractor has failed to comply with federal or VDOT DBE Program regulations and/or their requirements on that contract, VDOT has the authority and discretion to determine the extent to which the DBE contract requirements have not been met, and will assess against the Contractor any remedies available at law or provided in the contract in the event of such a contract breach.

3. Disqualification of Bidder

Bidders may be disqualified from bidding for failure to comply with the requirements of this Special Provision, the contract specifications, and VDOT Road and Bridge Specifications.

4. Bidding Procedures

The failure of a bidder to submit the required documentation within the timeframes specified in the **Contract Goal, Good Faith Efforts Specified** section of this Special Provision may be cause for rejection of that bidder's bid. If the lowest bidder is rejected for failure to submit required documentation in the specified time frames, the Department may either award the work to the next lowest bidder, or re-advertise and construct the work under contract or otherwise as determined by the Commonwealth.

In order to award a contract to a bidder that has failed to meet DBE contract goal requirements, VDOT will determine if the bidder's efforts were adequate good faith efforts, and if given all relevant circumstances, those efforts were to the extent a bidder actively and aggressively seeking to meet the requirements would make. Regardless of the DBE contract goal participation level proposed by the bidder or the extent of good faith efforts shown, all bidders shall timely and separately file their completed and executed Forms C-111, C-112, C-48, and Form C-49, as aforementioned, or face potential bid rejection. If a bidder does not submit its completed and executed C-111, or C-112, when required by this Special Provision, the bidder's bid will be considered non-responsive and may be rejected. If, after reconsideration, the Department determines the bidder has failed to meet the requirements of the contract goal and has failed to make adequate good faith efforts to achieve the level of DBE participation as specified in the bid proposal, the bidder's bid will be rejected. If sufficient documented evidence is presented to demonstrate that the apparent low bidder made reasonable good faith efforts, the Department will award the contract and reduce the DBE requirement to the

actual commitment identified by the lowest successful bidder at the time of its bid. The Contractor is encouraged to seek additional participation during the life of the contract.

If the Contractor fails to conform to the schedule of DBE participation as shown on the progress schedule, or at any point at which it is clearly evident that the remaining dollar value of allowable credit for performing work is insufficient to obtain the scheduled participation, the Contractor and any aforementioned affiliates may be enjoined from bidding for 60 days or until such time as conformance with the schedule of DBE participation is achieved. In such instances, the Contractor is expected to seek DBE participation towards meeting the goal during the prosecution of the contract.

If the Contractor fails upon completion of the project to meet the required participation, the Contractor and any prime contractual affiliates, as in the case of a joint venture, may be enjoined from bidding as a prime Contractor, or participating as a subcontractor on VDOT projects for a period of 90 days.

Prior to enjoinder from bidding or denial to participate as a subcontractor for failure to comply with participation requirements, as provided hereinbefore, the Contractor may submit documentation to the State Construction Engineer to substantiate that failure was due solely to quantitative underrun(s) or elimination of items subcontracted to DBEs, and that all feasible means have been used to obtain the required participation. The State Construction Engineer upon verification of such documentation shall make a determination whether or not the Contractor has met the requirements of the contract.

If it is determined that the aforementioned documentation is insufficient or the failure to meet required participation is due to other reasons, the Contractor may request an appearance before the Administrative Reconsideration Panel to establish that all feasible means were used to meet such participation requirements. The decision of the Administrative Reconsideration Panel shall be administratively final. The enjoinder period will begin upon the Contractor's failure to request a hearing within the designated time frame or upon the Administrative Reconsideration Panel's decision to enjoin, as applicable.

5. Verification of DBE Participation and Imposed Damages

If the Contractor fails to comply with correctly completing and submitting any of the required documentation requested by this provision within the specified time frames, the Department will withhold payment of the monthly progress estimate until such time as the required submissions are received by VDOT. Where such failures to provide required submittals or documentation are repeated the Department will move to enjoin the Contractor and any prime contractual affiliates, as in the case of a joint venture, from bidding as a prime Contractor, or participating as a subcontractor on VDOT projects until such submissions are received.

In addition to the remedies described heretofore in this provision VDOT also exercises its rights with respect to the following remedies:

Suspect Evidence of Criminal Behavior

Failure of a bidder, Contractor, or subcontractor to comply with the Virginia Department of Transportation Road and Bridge Specifications and these Special Provisions wherein there appears to be evidence of criminal conduct shall be referred to the Attorney General for the Commonwealth of Virginia and/or the FHWA Inspector General for criminal investigation and, if warranted prosecution.

In appropriate cases, VDOT will bring to the attention of the U. S. Department of Transportation (USDOT) any appearance of false, fraudulent, or dishonest conduct in connection with the DBE program, so that USDOT can take the steps, e.g., referral to the Department of Justice for criminal prosecution, referral to the USDOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules provided in 49CFR Part 31.

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION**

PROJECT:

FHWA:

This form must be completed, signed and returned with bid; and failure to do so may result in the rejection of your bid. **THE CONTRACTOR SHALL AFFIRM THE FOLLOWING STATEMENT EITHER BY SIGNING THE AFFIDAVIT AND HAVING IT NOTARIZED OR BY SIGNING THE UNSWORN DECLARATION UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES.** A SEPARATE FORM MUST BE SUBMITTED BY EACH PRINCIPAL OF A JOINT VENTURE BID.

STATEMENT. In preparation and submission of this bid, I, the firm, corporation or officers, agents or employees thereof did not, either directly or indirectly, enter into any combination or arrangement with any persons, firm or corporation or enter into any agreement, participate in any collusion, or otherwise take any action in the restraint of free, competitive bidding in violation of the Sherman Act (15 U.S.C. Section 1) or Article 1.1 or Chapter 12 of Title 18.2 (Virginia Governmental Frauds Act), Sections 59.1-9.1 through 59.1-9.17 or Sections 59.1-68.6 through 59.1-68.8 of the Code of Virginia.

AFFIDAVIT

The undersigned is duly authorized by the bidder to make the foregoing statement to be filed with bids submitted on behalf of the bidder for contracts to be let by the Commonwealth Transportation Board.

Signed at _____, this ____ day of _____, 20 ____
County (City), STATE

(Name of Firm) By: _____ Title (print)
(Signature)

STATE of _____ COUNTY (CITY) of _____

To-wit: _____

I _____, a Notary Public in and for the State and
County(City) aforesaid, hereby certify that this day _____

personally appeared before me and made oath that he is duly authorized to make the above statements and that such statements are true and correct.

Subscribed and sworn to before me this _____ day of _____, 20 ____

My Commission expires _____

Notary Public

**OR
UNSWORN DECLARATION**

The undersigned is duly authorized by the bidder to make the foregoing statement to be filed with bids submitted on behalf of the bidder for contracts to be let by the Commonwealth Transportation Board.

Signed at _____, this ____ day of _____, 20 ____
County (City), STATE

(Name of Firm) By: _____ Title (print)
(Signature)

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
AFFIDAVIT**

PROJECT:

FHWA:

This form must be completed, signed, notarized and returned with bid; and failure to do so, may result in the rejection of your bid. A separate form must be submitted by each principal of a joint venture bid.

1. I, the firm, corporation or officers, agents or employees thereof have neither directly nor indirectly entered into any combination or arrangement with any person, firm or corporation or entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with such contract, the effect of which is to prevent competition or increase the cost of construction or maintenance of roads or bridges.

During the preceding twelve months, I (we) have been a member of the following Highway Contractor's Associations, as defined in Section 33.1-336 of the Code of Virginia (1970). (If none, so state).

NAME	Location of Principal Office
_____	_____
_____	_____
_____	_____

2. I (we) have _____, have not _____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that I/We have _____, have not _____, filed with the joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor [41 CFR 60-1.7(b)(1)], and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contract or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b) (1) prevents the award of contract and subcontract unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

(Continued)

ORDER NO.:
CONTRACT ID. NO.:

Form C-105
page 2

3. The bidder certifies to the best of its knowledge and belief, that it and its principals:
- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offence in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated above; and
 - (d) Where the bidders is unable to certify to any of the statements in this certification, the bidder shall show an explanation below.

Explanations will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any explanation noted, indicate below to whom it applies, initiating agency, and dates of action. Providing false information may result in federal criminal prosecution or administration sanctions. The bidder shall provide immediate written notice to the Department if at any time the bidder learns that its certification was erroneous when submitted or has become erroneous by reason of change circumstances.

The undersigned is duly authorized by the bidder to make the foregoing statements to be filed with bids submitted on behalf of the bidder for contracts to be let by the Commonwealth Transportation Board.

Signed at _____, this ____ day of _____, 20 ____
County (City), STATE

By: _____
(Name of Firm) (Signature) Title (print)

STATE of _____ COUNTY (CITY) of _____

To-wit:

I _____, a Notary Public in and for the State and
County(City) aforesaid, hereby certify that this day _____

personally appeared before me and made oath that he is duly authorized to make the above statements and that such statements are true and correct.

Subscribed and sworn to before me this _____ day of _____, 20 ____

My Commission expires _____

Notary Public

FHWA NO. _____

THIS FORM CAN BE USED BY THE CONTRACTOR TO SUBMIT THE NAMES OF DBE FIRMS TO BE UTILIZED ON THE PROJECT. THE CONTRACTOR SHALL INDICATE THE DESCRIPTION OF THE CATEGORY (S, M, SP or H) AND THE TYPE OF WORK THAT EACH DBE WILL PERFORM AND THE ALLOWABLE CREDIT PER ITEM(S). ADDITIONAL SHEETS TO SHOW THE ALLOWABLE CREDIT PER ITEM MAY BE ATTACHED IF NECESSARY. **PLEASE NOTE:** THE AMOUNT OF ALLOWABLE CREDIT FOR A DBE SUPPLIER IS 60% OF THE TOTAL COST OF THE MATERIALS OR SUPPLIES OBTAINED AND 100% FOR A DBE MANUFACTURER OF THE MATERIALS AND SUPPLIES OBTAINED. A CONTRACTOR MAY COUNT 100% OF THE FEES PAID TO A DBE HAULER FOR THE DELIVERY OF MATERIALS AND SUPPLIES TO THE PROJECT SITE, BUT NOT FOR THE COST OF THE MATERIALS AND SUPPLIES THEMSELVES.

PERCENT ATTAINED BY BIDDER	%
100	100
90	100
80	100
70	100
60	100
50	100
40	100
30	100
20	100
10	100
0	100

TOTAL \$

TOTAL CONTRACT VALUE \$ x REQUIRED DBE % = \$

_____ BY _____
TITLE DATE

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
CERTIFICATION OF BINDING AGREEMENT
WITH
DISADVANTAGED BUSINESS ENTERPRISE FIRMS**

Project No.:

Federal Project No.:

This form is to be submitted in accordance with the Department's Special Provision for Section 107.15.

It is hereby certified by the below signed Contractors that there exists a written quote, acceptable to the parties involved preliminary to a binding subcontract agreement stating the details concerning the work to be performed and the price which will be paid for the aforementioned work. This document is not intended to, nor should it be construed to, contain the entire text of the agreement between the contracting parties. This document does not take the place of, nor may it be substituted for, an official subcontracting agreement in those situations that may require such an agreement. A copy of the fully executed *subcontract agreement* shall be submitted to the Engineer within fourteen (14) business days after contract execution.

It is further certified that the aforementioned mutually acceptable quote and fully executed subcontract agreement represent the entire agreement between the parties involved and that no conversations, verbal agreements, or other forms of non-written representations shall serve to add to, delete, or modify the terms as stated.

The prime Contractor further represents that the aforementioned mutually acceptable quote and fully executed subcontract agreement shall remain on file for a period of not less than one year following completion of the prime's contract with the Department or for such longer period as provisions of governing Federal or State law or regulations may require. For purposes of this form, the term Prime Contractor shall refer to any Contractor utilizing a DBE subcontractor, regardless of tier, in which they are claiming DBE credit toward the contract goal.

Contractors further jointly and severally represent that said binding agreement is for the performance of a "commercially useful function" as that term is employed in 49 C.F.R. Part 26.55 (c), (d).

**TO BE SIGNED BY THE SUBCONTRACTOR TO THE PRIME CONTRACTOR, AND ANY LOWER TIER
SUBCONTRACTORS HAVING A CONTRACT WITH THE BELOW NAMED DBE FIRM**

Prime Contractor _____

By: _____
Signature Title

Date: _____

First Tier
Subcontractor if
Applicable

By: _____
Signature Title

Date: _____

Second Tier
Subcontractor if
Applicable

By: _____
Signature Title

Date: _____

Third Tier
Subcontractor if
Applicable

By: _____
Signature Title

Date: _____

DBE Contractor

By: _____
Signature Title

Date: _____

FHWA NO. _____ **DATE SUBMITTED** _____

The bidder certifies this form accurately represents its solicitation and utilization or non-utilization, as indicated, of the firms listed below for performance of work on this contract. The bidder also certifies he/she has had direct contact with the named firms regarding participation on this project.

TITLE

SUBCONTRACTOR/SUPPLIER SOLICITATION AND UTILIZATION (ALL)

[illegible]

BIDDER MUST SIGN EACH ADDITIONAL SHEET TO CERTIFY ITS CONTENT AND COMPLETION OF FORM.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
DBE GOOD FAITH EFFORTS DOCUMENTATION

--DO NOT DETACH--

**THIS INFORMATION MUST BE SUBMITTED
WITHIN 2 DAYS AFTER BID OPENING IF YOUR
BID DOES NOT MEET THE PROJECT DBE
REQUIREMENTS, OR
WHEN REQUESTED BY VDOT**

CONTRACT I.D. NUMBER _____

PROJECT NUMBER: EN00-122-138, UPC #103978

FHWA NUMBER: TEA-5A03(734)

DISTRICT _____

DATE BID SUBMITTED _____

BIDDER'S NAME _____

SIGNATURE _____

TITLE _____

VENDOR NUMBER _____

DBE GOAL FROM BID PROPOSAL: 10%

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
DBE GOOD FAITH EFFORTS DOCUMENTATION

CONTRACT I.D. NO. _____ DATE SUBMITTED _____

IF THE DBE GOAL ESTABLISHED FOR THIS CONTRACT HAS NOT BEEN MET OR VDOT REQUESTS THE SUBMITTAL THEREOF, THE BIDDER IS REQUIRED TO SUBMIT GOOD FAITH EFFORTS AS OUTLINED IN THIS DOCUMENT.

THE BIDDER ACKNOWLEDGES AND CERTIFIES THAT THIS FORM ACCURATELY REPRESENTS THE INFORMATION CONTAINED HEREIN.

BIDDER _____ SIGNATURE _____

TITLE _____

NAMES OF CERTIFIED DBEs AND THE DATES ON WHICH THEY WERE SOLICITED TO BID ON THIS PROJECT

INCLUDE THE ITEMS OF WORK OFFERED AND THE DATES AND METHODS USED FOR FOLLOWING UP INITIAL SOLICITATIONS TO DETERMINE WHETHER OR NOT DBEs WERE INTERESTED.

NAMES AND VENDOR NUMBERS OF DBEs SOLICITED	DATE OF INITIAL SOLICITATION	ITEM(S) OF WORK	FOLLOW-UP METHODS AND DATES

NOTE: ATTACH ADDITIONAL PAGES IF NECESSARY

ATTACH COPIES OF SOLICITATIONS, TELEPHONE RECORDS, FAX CONFIRMATIONS, ELECTRONIC INFORMATION, ETC.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
DBE GOOD FAITH EFFORTS DOCUMENTATION

CONTRACT I.D. NO. _____ DATE SUBMITTED _____

IF THE DBE GOAL ESTABLISHED FOR THIS CONTRACT HAS NOT BEEN MET OR VDOT REQUESTS THE SUBMITTAL THEREOF, THE BIDDER IS REQUIRED TO SUBMIT GOOD FAITH EFFORTS AS OUTLINED IN THIS DOCUMENT.

THE BIDDER ACKNOWLEDGES AND CERTIFIES THAT THIS FORM ACCURATELY REPRESENTS THE INFORMATION CONTAINED HEREIN.

BIDDER _____ SIGNATURE _____

TITLE _____

TELEPHONE LOG

DBE(s) CALLED	TELEPHONE NUMBER	DATE CALLED	TIME CALLED	CONTACT PERSON OR VOICE MAIL STATUS

NOTE: ATTACH ADDITIONAL PAGES IF NECESSARY

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
DBE GOOD FAITH EFFORTS DOCUMENTATION

CONTRACT I.D. NO. _____ DATE SUBMITTED _____

IF THE DBE GOAL ESTABLISHED FOR THIS CONTRACT HAS NOT BEEN MET OR VDOT REQUESTS THE SUBMITTAL THEREOF, THE BIDDER IS REQUIRED TO SUBMIT GOOD FAITH EFFORTS AS OUTLINED IN THIS DOCUMENT.

THE BIDDER ACKNOWLEDGES AND CERTIFIES THAT THIS FORM ACCURATELY REPRESENTS THE INFORMATION CONTAINED HEREIN.

BIDDER _____ SIGNATURE _____

TITLE _____

ITEM(S) OF WORK THAT THE BIDDER MADE AVAILABLE TO DBE FIRMS

IDENTIFY THOSE ITEM(S) OF WORK THAT THE BIDDER MADE AVAILABLE TO DBE FIRMS OR THOSE ITEM(S) THE BIDDER IDENTIFIED AND DETERMINED TO SUBDIVIDE INTO ECONOMICALLY FEASIBLE UNITS TO FACILITATE DBE PARTICIPATION. FOR EACH ITEM LISTED, SHOW THE DOLLAR VALUE AND PERCENTAGE OF THE TOTAL CONTRACT AMOUNT. IT IS THE BIDDER'S RESPONSIBILITY TO DEMONSTRATE THAT SUFFICIENT WORK TO MEET THE GOAL WAS MADE AVAILABLE TO DBE FIRMS.

ITEM(S) OF WORK MADE AVAILABLE	BIDDER NORMALLY PERFORMS ITEM(S) (Y/N)	ITEM(S) BROKEN DOWN TO FACILITATE PARTICIPATION (Y/N)	AMOUNT IN DOLLARS	PERCENTAGE OF CONTRACT

NOTE: INFORMATION REQUIRED FOR THIS SECTION CONTINUED ON SHEET 5
ATTACH ADDITIONAL PAGES IF NECESSARY

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
DBE GOOD FAITH EFFORTS DOCUMENTATION

CONTRACT I.D. NO. _____ DATE SUBMITTED _____

IF THE DBE GOAL ESTABLISHED FOR THIS CONTRACT HAS NOT BEEN MET OR VDOT REQUESTS THE SUBMITTAL THEREOF, THE BIDDER IS REQUIRED TO SUBMIT GOOD FAITH EFFORTS AS OUTLINED IN THIS DOCUMENT.

THE BIDDER ACKNOWLEDGES AND CERTIFIES THAT THIS FORM ACCURATELY REPRESENTS THE INFORMATION CONTAINED HEREIN.

BIDDER _____ SIGNATURE _____

TITLE _____

**ADDITIONAL INFORMATION REGARDING ITEM(S) OF WORK THAT THE
BIDDER MADE AVAILABLE TO DBE FIRMS** (Continued From Sheet 4)

ITEM(S) OF WORK MADE AVAILABLE, NAMES OF SELECTED FIRMS AND DBE STATUS, DBEs THAT PROVIDED QUOTES, PRICE QUOTE FOR EACH FIRM, AND THE PRICE DIFFERENCE FOR EACH DBE IF THE SELECTED FIRM IS NOT A DBE.

ITEM(S) OF WORK MADE AVAILABLE(CONT.)	NAME OF SELECTED FIRM AND VENDOR NUMBER	DBE OR NON-DBE	NAME OF REJECTED FIRM(S)	QUOTE IN DOLLARS	PRICE DIFFERENCE IN DOLLARS

NOTE: ATTACH ADDITIONAL PAGES IF NECESSARY.

IF THE FIRM SELECTED FOR THE ITEM IS NOT A DBE, PROVIDE THE REASON(S) FOR THE SELECTION ON A SEPARATE PAGE AND ATTACH.

PROVIDE NAMES, ADDRESSES, AND TELEPHONE NUMBERS FOR THE FIRMS LISTED ABOVE.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
DBE GOOD FAITH EFFORTS DOCUMENTATION

CONTRACT I.D. NO. _____ DATE SUBMITTED _____

IF THE DBE GOAL ESTABLISHED FOR THIS CONTRACT HAS NOT BEEN MET OR VDOT REQUESTS THE SUBMITTAL THEREOF, THE BIDDER IS REQUIRED TO SUBMIT GOOD FAITH EFFORTS AS OUTLINED IN THIS DOCUMENT.

THE BIDDER ACKNOWLEDGES AND CERTIFIES THAT THIS FORM ACCURATELY REPRESENTS THE INFORMATION CONTAINED HEREIN.

BIDDER _____ SIGNATURE _____

TITLE _____

ADVERTISEMENTS OR PROOFS OF PUBLICATION.

NAMES AND DATES OF EACH PUBLICATION IN WHICH A REQUEST FOR DBE PARTICIPATION FOR THE PROJECT WAS PLACED BY THE BIDDER. ATTACH COPIES OF PUBLISHED ADVERTISEMENTS OR PROOFS OF PUBLICATION.

PUBLICATIONS	DATES OF ADVERTISEMENT

NOTE: ATTACH ADDITIONAL PAGES IF NECESSARY

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
DBE GOOD FAITH EFFORTS DOCUMENTATION

CONTRACT I.D. NO. _____ DATE SUBMITTED _____

IF THE DBE GOAL ESTABLISHED FOR THIS CONTRACT HAS NOT BEEN MET OR VDOT REQUESTS THE SUBMITTAL THEREOF, THE BIDDER IS REQUIRED TO SUBMIT GOOD FAITH EFFORTS AS OUTLINED IN THIS DOCUMENT.

THE BIDDER ACKNOWLEDGES AND CERTIFIES THAT THIS FORM ACCURATELY REPRESENTS THE INFORMATION CONTAINED HEREIN.

BIDDER _____ SIGNATURE _____

TITLE _____

NAMES OF AGENCIES CONTACTED TO PROVIDE ASSISTANCE

NAMES OF AGENCIES (SEE SPECIAL PROVISION FOR 107.15) AND THE DATES THESE AGENCIES WERE CONTACTED TO PROVIDE ASSISTANCE IN CONTACTING, RECRUITING, AND USING DBE FIRMS. IF THE AGENCIES WERE CONTACTED IN WRITING, ATTACH COPIES OF SUPPORTING DOCUMENTS.

NAME OF AGENCY	METHOD AND DATE OF CONTACT	RESULTS

NOTE: ATTACH ADDITIONAL PAGES IF NECESSARY.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
DBE GOOD FAITH EFFORTS DOCUMENTATION

CONTRACT I.D. NO. _____ DATE SUBMITTED _____

IF THE DBE GOAL ESTABLISHED FOR THIS CONTRACT HAS NOT BEEN MET OR VDOT REQUESTS THE SUBMITTAL THEREOF, THE BIDDER IS REQUIRED TO SUBMIT GOOD FAITH EFFORTS AS OUTLINED IN THIS DOCUMENT.

THE BIDDER ACKNOWLEDGES AND CERTIFIES THAT THIS FORM ACCURATELY REPRESENTS THE INFORMATION CONTAINED HEREIN.

BIDDER _____ SIGNATURE _____

TITLE _____

TECHNICAL ASSISTANCE AND INFORMATION PROVIDED TO DBEs

EFFORTS MADE TO PROVIDE INTERESTED DBEs WITH ADEQUATE INFORMATION ABOUT THE PLANS, SPECIFICATIONS, AND REQUIREMENTS OF THE BID DOCUMENTS TO ASSIST THE DBEs IN RESPONDING TO A SOLICITATION.

IDENTIFY THE DBEs ASSISTED, THE INFORMATION PROVIDED, AND THE DATE OF CONTACT. ATTACH COPIES OF SUPPORTING DOCUMENTS.

DBEs ASSISTED	INFORMATION PROVIDED	DATE OF CONTACT

NOTE: ATTACH ADDITIONAL PAGES IF NECESSARY.

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
DBE GOOD FAITH EFFORTS DOCUMENTATION

CONTRACT I.D. NO. _____ DATE SUBMITTED _____

IF THE DBE GOAL ESTABLISHED FOR THIS CONTRACT HAS NOT BEEN MET OR VDOT REQUESTS THE SUBMITTAL THEREOF, THE BIDDER IS REQUIRED TO SUBMIT GOOD FAITH EFFORTS AS OUTLINED IN THIS DOCUMENT.

THE BIDDER ACKNOWLEDGES AND CERTIFIES THAT THIS FORM ACCURATELY REPRESENTS THE INFORMATION CONTAINED HEREIN.

BIDDER _____ SIGNATURE _____

TITLE _____

EFFORTS MADE TO ASSIST DBEs OBTAIN BONDING, LINES OF CREDIT, INSURANCE, ETC.

EFFORTS MADE TO PROVIDE INTERESTED DBEs IN OBTAINING BONDING, LINES OF CREDIT, INSURANCE, NECESSARY EQUIPMENT, SUPPLIES, MATERIALS, OR RELATED ASSISTANCE OR SERVICES, EXCLUDING SUPPLIES AND EQUIPMENT THE SUBCONTRACTOR PURCHASES OR LEASES FROM THE PRIME CONTRACTOR OR ITS AFFILIATES.

IDENTIFY THE DBEs ASSISTED, THE ASSISTANCE OFFERED, AND THE DATES OF SERVICES OFFERED AND PROVIDED. ATTACH COPIES OF SUPPORTING DOCUMENTS.

DBEs ASSISTED	ASSISTANCE OFFERED	DATES SERVICES OFFERED AND/OR PROVIDED

NOTE: ATTACH ADDITIONAL PAGES IF NECESSARY.

S102CF2-0813

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
USE OF DOMESTIC MATERIAL

July 26, 2013

SECTION 102.05 PREPARATION OF BID of the Specifications is amended to include the following:

In accordance with the provisions of Section 635.410(b) of Title 23 CFR, hereinafter referred to as "Buy America", except as otherwise specified, all iron and steel products (including miscellaneous steel items such as fasteners, nuts, bolts and washers) to be permanently incorporated for use on federal aid projects shall be produced in the United States of America regardless of the percentage they exist in the manufactured product or final form they take. Therefore, "Domestically produced in the United States of America" means all manufacturing processes must occur in the United States of America, to mean, in one of the 50 States, the District of Columbia, Puerto Rico or in the territories and possessions of the United States. Manufacturing processes are defined as any process which alters or modifies the chemical content, physical size or shape or final finish of iron or steel material) such as rolling, extruding, bending, machining, fabrication, grinding, drilling, finishing, or coating whereby a raw material or a reduced iron ore material is changed, altered or transformed into a steel or iron item or product which, because of the process, is different from the original material. For the purposes of satisfying this requirement "coating" is defined as the application of epoxy, galvanizing, painting or any other such process that protects or enhances the value of the material. Materials used in the coating process need not be domestic materials.

For the purposes herein the manufacturing process is considered complete when the resultant product is ready for use as an item in the project (e.g. fencing, posts, girders, pipe, manhole covers, etc.) or is incorporated as a component of a more complex product by means of further manufacturing. Final assembly of a product may occur outside of the United States of America provided no further manufacturing process takes place.

Raw materials such as iron ore, pig iron, processed, pelletized and reduced iron ore, waste products (including scrap, that is, steel or iron no longer useful in its present form from old automobiles, machinery, pipe, railroad rail, or the like and steel trimmings from mills or product manufacturing) and other raw materials used in the production of steel and/or iron products may, however, be imported. Extracting, handling, or crushing the raw materials which are inherent to the transporting the materials for later use in the manufacturing process are exempt from Buy America. The use of foreign source steel or iron billet is not acceptable under the provisions of Buy America. For the purposes of this provision all steel or iron material not meeting the criteria as domestically produced in the United States of America will be considered as "foreign" material. All iron and steel items will be classified hereinafter as "domestic" or "foreign", identified by and subject to the provisions herein.

Domestically produced iron or steel ingots or billets shipped outside the United States of America for any manufacturing process and returned for permanent use in a project would not comply with "Buy America" requirements.

Buy America provisions do not apply to iron or steel products used temporarily in the construction of a project such as temporary sheet piling, temporary bridges, steel scaffolding, falsework or such temporary material or product or material that remains in place for the Contractor's convenience.

Section 635.410(b) of Title 23 CFR permits a minimal amount of steel or iron material to be incorporated in the permanent work on a federal-aid contract. The cost of such materials or products must not exceed one-tenth of one percent of the contract amount or \$2500, whichever is greater. The cost of the foreign iron or steel material is defined as its monetary value delivered to the job site

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

and supported by invoices or bill of sale to the Contractor. This delivered to site cost must include transportation, assembly, installation and testing.

In the event the total cost of all "foreign" iron and steel product or material does not exceed one-tenth of one percent of the total contract cost or \$2,500, whichever is greater, the use of such material meeting the limitations herein will not be restricted by the domestic requirements herein. However, by signing the bid, the Bidder certifies that such cost does not exceed the limits established herein.

Waivers:

With prior concurrence from Federal Highway Administration (FHWA) headquarters, the Federal Highway Division Administrator may grant a waiver to specific projects provided it can be demonstrated:

1. that the use of domestic steel or iron materials would be inconsistent with the public interest; or
2. materials or products requested for use are not produced in the United States in sufficient or reasonably available quantities and are of satisfactory quality for use in the permanent work.

The waiver request shall be submitted with supportive information to include:

1. Project number\description, project cost, waiver item, item cost, country of origin for the product, reason for the waiver, and
2. Analysis of redesign of the project using alternative or approved equal domestic products

In order to grant such a waiver the request for the waiver must be published in the Federal Register for a period not less than 15 days or greater than 60 days prior to waiving such requirement. An initial 15 day comment period to the waiver will be available to the public by means of the FHWA website: <http://www.fhwa.dot.gov/construction/contracts/waivers.cfm>. Following that initial 15 day period of review and comment the request for waiver will be published by the FHWA in the Federal Register. The effective date of the FHWA finding, either to approve or deny the waiver request, will be 15 days following publication in the Federal Register.

Only the FHWA Administrator may grant nationwide waivers which still are subject to the public rulemaking and review process.

Alternative Bidding Procedures:

An alternative bidding procedure may be employed to justify the use of foreign iron and/or steel. To qualify under this procedure the total project is bid using two alternatives, one based on the use of domestic products and the other, the use of corresponding foreign source steel and/or iron materials.

In accordance with the provisions of Section 103.02 the Contract will be awarded to the lowest responsive and responsible bidder who submits the lowest total bid based on furnishing domestic iron or steel unless such total exceeds the lowest total bid based on furnishing foreign iron and/or steel by more than 25 percent, in which case the award will be made to the lowest responsive and responsible bidder furnishing foreign iron and/or steel based upon furnishing verifiable supportive data. The bidder shall submit a bid based on permanently incorporating only domestic iron and/or steel in the construction of the project. The bidder may also submit a bid for the same proposed contract based on being allowed to permanently incorporate corresponding foreign iron and/or steel materials meeting the other contract requirements into the work on the contract. If he chooses to submit such a bid, that alternate bid shall clearly indicate which foreign iron and/or steel items will be permanently

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

installed in the work as well as contain prices for all other items listed in the corresponding domestic proposal to complete a total "Foreign" bid.

In the event the contract is awarded to the bidder furnishing foreign iron and/or steel materials or items the provision for price adjustment of steel items will be permitted, however, price fluctuations shall use the U.S. index as stated in the Special Provision for Price Adjustment For Steel. The Contractor must indicate which corresponding eligible steel items he chooses price adjustment to apply. In the event the contract is awarded to a bidder furnishing foreign iron and/or steel items and during the life of that contract the Contractor discovers he cannot furnish foreign iron and/or steel material as originally anticipated and agreed upon, he shall be responsible to honor the total bid price and furnish such iron and/or steel materials meeting the contract requirements from other sources as necessary to complete the work.

In the event the Contractor proposes to furnish "foreign" iron and steel and can verify a savings in excess of 25 percent of the overall project cost if bid using domestic materials, the Contractor shall submit a second complete paper bid proposal clearly marked "Foreign" including Form C-7 and supportive data supplement on all sheets. Supportive data shall list, but not be limited to, origin of material, best price offer, quantity and complete description of material, mill analysis, evidence or certification of conformance to contract requirements, etc. The "Foreign" bid shall be completed using the best price offer for each corresponding bid item supplying foreign material in the alternative bid and submit the same with the Contractor's "Domestic" bid. The Contractor shall write the word "Foreign" by the bid total shown on Form C-7 as well as last page of Schedule of Items showing the total bid amount. The bidder shall also contact the State Contract Engineer to inform him that he is also submitting an alternate "Foreign" paper bid.

The information listed on the supportive data sheet(s) will be used to provide the basis for verification of the required cost savings. In the event comparison of the prices given, or corrected as provided in Section 103.01 of the Specifications, shows that use of "foreign" iron and steel items does not represent a cost savings exceeding the aforementioned 25 percent, "domestic" iron and/or steel and prices given there for shall be used and the "100 percent Domestic Items Total" shall be the Contractor's bid.

Certification of Compliance:

Where domestic material is supplied, prior to incorporation into the Work, the Contractor shall furnish to the Department a certificate of compliance (such as may be furnished by steel mill test reports) that all steel and/or iron products supplied to the project except as may be permitted (one-tenth of one percent of the total contract cost or \$2,500, whichever is greater) and permanently incorporated into the work satisfies the domestic requirements herein. This certification shall contain a definitive statement about the origin of all products covered under the provisions of Buy America as stated herein.

In lieu of the Contractor providing personal certification, the Contractor may furnish a stepped certification in which each handler of the product, such as supplier, fabricator, manufacturer, processor, etc. furnishes an individual certification that their step in the process was domestically performed.

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

GUIDELINES — FOR PROJECTS REQUIRING SELECT MATERIAL

SS20702-0714

February 19, 2014

VIRGINIA DEPARTMENT OF TRANSPORTATION
2007 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS**SUPPLEMENTAL SECTION 207—SELECT MATERIAL****SECTION 207—SELECT MATERIAL** of the Specifications is amended as follows:

Section 207.03—Job Mix Formula for Select Material, Type I is amended to replace the first paragraph with the following:

The Contractor shall submit or shall have the source of supply submit a job-mix formula for each mixture for the Engineer's approval through the "Producer Lab Analysis and Information Details" (PLAID) website <https://plaid.vdot.virginia.gov> prior to starting work. The formula shall establish a single percentage of aggregate passing each required sieve size denoted in Table II-6 and shall be in effect until a modification is approved by the Engineer. If unsatisfactory results or other changed conditions make it necessary, the Contractor shall prepare and submit a new formula for the Engineer's approval.

Section 207.05—Acceptance of Select Material, Type I is amended to replace the first and second paragraphs with the following:

Sampling and testing for determination of grading, moisture, and Atterberg limits shall be performed by the Contractor. The Contractor shall provide such test results within 48 hours of sampling to the Department through the "Producer Lab Analysis and Information Details" (PLAID) website <https://plaid.vdot.virginia.gov>. The Contractor shall maintain appropriate, current quality control charts. The Department will perform independent monitor tests. If there is a statistically significant difference between the two sets of results, an investigation will be made to determine the reason for the difference. If it is determined that the material does not conform to the requirements of the Contract, the material will be rejected or a payment adjustment will be made in accordance with the requirements of Section 207.07.

Determination of gradation and Atterberg limits will be based on a mean of the results of tests performed on four samples taken in a stratified random manner from each lot. Lots of 2000 tons or 4000 tons may be used at the discretion of the Engineer when warranted by annual plant shipping quantity and past performance. If visual examination reveals that the material is obviously contaminated or segregated, the material will be rejected without additional sampling or testing. If it is necessary to determine the gradation and Atterberg limits of the material in an individual location, one sample taken from the material in question will be tested and the results will be compared to the job-mix formula with the tolerances specified in Table II-7 and Table II-8 for one test. The results obtained will apply only to the material in question.

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

GUIDELINES — FOR PROJECTS REQUIRING HYDRAULIC CEMENT CONCRETE. LOW PERMEABILITY CONCRETE IS NOW INCLUDED IN THIS SS. WHEN THIS PROVISION APPLIES INCLUDE THE FOLLOWING IN THE PROPOSAL: SS21402 HYDRAULIC CEMENT AND SS21501 HYDRAUL CEMENT CONC ADMIXTURES.

SS21706-0214

July 29, 2013

VIRGINIA DEPARTMENT OF TRANSPORTATION
2007 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS

SUPPLEMENTAL SECTION 217—HYDRAULIC CEMENT CONCRETE

SECTION 217—HYDRAULIC CEMENT CONCRETE of the Specifications is amended as follows:

Section 217.02(a) Cementitious Materials is replaced with the following:

Cementitious materials shall be a blend of mineral admixtures and Portland cement or a blended cement. In overlay concretes, expansive hydraulic cement is permitted in lieu of Portland cement. Portland cement (Types I, II, III) blended cements (Type IP, Type IS) or expansive cement (Type K) shall comply with Section 214 of the Specifications. Flyash, ground granulated iron blast-furnace slag (GGBFS), silica fume or metakaolin shall conform to Section 215 of the Specifications. As a portion of the cementitious material, Table 1 lists the minimum percents of specific pozzolans required by mass of the cementitious material depending on the alkali content of the cement. Any other mineral admixture or any other amount or combination of mineral admixtures may be used if approved by the Engineer. As a portion of the cementitious material, the fly ash content shall not exceed 30 percent for Class F, the ground granulated blast-furnace slag content shall not exceed 50 percent and the silica fume content shall not exceed 10 percent unless approved by the Engineer. Class C Flyash or other pozzolans may be used provided the contractor demonstrates that the percent usage of Class C Flyash or other pozzolans have a maximum expansion of 0.15% according to ASTM C227 at 56 days using borosilicate glass as aggregate. Blended cements require no further pozzolan additions to meet minimum pozzolan content to compensate for the alkali-silica reaction.

Up to 7 percent silica fume may be added to all combinations of cementitious materials to reduce early permeability without approval by the Engineer. Other silica fume additions must be approved by the Engineer.

Table 1 – Minimum percent pozzolan required by mass of cementitious material as a portion of the total cementitious materials and are based upon the alkali content of the cement.

	Total Alkalies of Cement is less than or equal to 0.75%	Total Alkalies of Cement is greater than 0.75% and less than or equal to 1.0%
Class F Flyash	20%	25%
GGBF Slag	40%	50%
Silica Fume	7%	10%
Metakaolin	7%	10%

TABLE II–17 Requirements for Hydraulic Cement Concrete is replaced with the following:

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

TABLE II-17
Requirements for Hydraulic Cement Concrete

Class of Concrete	Design Min. Laboratory Compressive Strength at 28 Days (f'c) (psi)	Aggregate Size No. ⁶	Design Max. Laboratory Permeability at 28 Days (Coulombs) ⁵	Design Max. Laboratory Permeability at 28 days - Over tidal water (Coulombs) ⁵	Nominal Max. Aggregate Size (in)	Min. Grade Aggregate	Min. Cementitious Content (lb./cu yd)	Max. Water /Cementitious Mat. (lb. Water/lb. Cement)	Consistency (in of slump)	Air Content (percent) ¹
A5 Prestressed and other special designs ²	5,000 or as specified on the plans	57 or 68	1,500	1,500	1	A	635	0.40	0-4	4 1/2 ± 1 1/2
A4 General	4,000	56 or 57	2,500	2,000	1	A	635	0.45	2-4	6 1/2 ± 1 1/2
A4 Post & rails	4,000	7,8 or 78	2,500	2,000	0.5	A	635	0.45	2-5	7 ± 2
A3 General	3,000	56 or 57	3,500	2,000	1	A	588	0.49	1-5	6 ± 2
A3a Paving	3,000	56 or 57	3,500	3,500	1	A	564	0.49	0-3	6 ± 2
A3b Paving	3,000	357	3,500	3,500	2	A	N.A	0.49	0-3	6 ± 2
B2 Massive or lightly Reinforced	2,200	57	N.A.	N.A.	1	B	494	0.58	0-4	4 ± 2
C1 Massive Unreinforced	1,500	57	N.A.	N.A.	1	B	423	0.71	0-3	4 ± 2
T3 Tremie seal	3,000	56 or 57	N.A.	N.A.	1	A	635	0.49	3-6	4 ± 2
Latex hydraulic cement concrete overlay ³	3,500	7,8 or 78	1,500	1,500	0.5	A	658	0.40	4-6	5 ± 2
Silica fume, silica fume /Class F Fly Ash or silica fume/slag concrete overlay ⁴	5000	7,8 or 78	1,500	1,500	0.5	A	658	0.40	4-7	6 ± 2
Class F Fly Ash or slag overlay	4000	7,8 or 78	1,500	1,500	0.5	A	658	0.40	4-7	6 ± 2

(See next page for notes on TABLE II-17).

(See next page for notes on TABLE II-17).

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

----- (TABLE II-17 Notes) -----

- ¹ When a high-range water reducer is used, the upper limit for entrained air may be increased by 1% and the slump shall not exceed 7 inches.
- ² When Class A5 concrete is used as the finishing bridge deck riding surface, or when it is to be covered with asphalt concrete with or without waterproofing, the air content shall be $5 \frac{1}{2} \pm 1 \frac{1}{2}$ percent.
- ³ The latex modifier content shall be 3.5 gallons per bag of cement. Slump shall be measured approximately 4.5 minutes after discharge from the mixer.
- ⁴ Silica fume with a minimum of 7% by weight of cementitious material; silica fume with a range of 2.5-5 % shall be combined with Class F Fly Ash in range of 15-20% and minimum cement of 77.5% by weight of cementitious material; silica fume with a range of 2.5-5% shall be combined with Ground Granulated Blast Furnace Slag in the range of 30-35% and a minimum cement of 67.5% by weight of cementitious material.
- ⁵ The permeability testing does not apply to small bridges identified on the bridge plans and to concrete structures and incidental concrete as described in Sections 219, 232, 302, 415, 502, 504, 506 and 519. Curing and testing of test cylinders for permeability will be in accordance with VTM 112.
- ⁶ The contractor may use different aggregate sizes or a combination of sizes to increase the coarse aggregate content of the concrete as approved by the Engineer. The maximum size of the coarse aggregate shall not exceed 2.5 inches.

Note: With the approval of the Engineer, the Contractor may substitute a higher class of concrete for that specified at the Contractor's expense.

Section 217.02(b) Formulated latex modifier is amended by adding the following:

For latex-modified concrete, Type I, Type II, Type III or Type K, cement shall be used without mineral admixtures.

Section 217.04(a)4. Admixtures is replaced with the following:

4. **Admixtures** shall be dispensed and used according to the manufacturer's recommendations. They shall be added within a limit of accuracy of 3 percent, by means of an approved, graduated, transparent, measuring device before they are introduced into the mixer. If more than one admixture is to be used, they shall be released in sequence rather than in the same instant. Once established, the sequence of dispensing admixtures shall not be altered. However, when the amount of admixture required to give the specified results deviates appreciably from the manufacturer's recommended dosage, use of the material shall be discontinued.

Section 217.05—Equipment is amended to replace the first paragraph with the following:

Equipment and tools necessary for handling materials and performing all parts of the work will be approved by the Engineer and must be in accordance with one of the following procedures:

1. having a current National Ready Mix Concrete Association Plant and Truck Certification, or
2. having a Department approved self-certification program in-place prior to the production of concrete for the Department.

Failure to comply with one or the other of these procedures will result in the concrete production being unapproved and work will not be allowed to proceed.

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

Section 217.05(a) Batching Equipment is amended to replace the second paragraph with the following:

Scales used for weighing aggregates and cement shall be approved and sealed in accordance with the requirements of Section 109 of the Specifications.

Section 217.05—Equipment is amended to add the following:

- (d) **High Performance Volumetric Mixers (HPVMs):** The Contractor may produce the specified class of hydraulic cement concrete in Table II-17 in accordance with Section 217.02(a) of the Specifications provided that the manufacturer's equipment meets the tolerance requirements of Section 217.04(a) of the Specifications and has a stamped plate from the Volumetric Mixers Manufacturers Bureau stating that the equipment conforms to the requirements in ASTM C685.

The hydraulic cement concrete shall be mixed at the point of delivery by a combination of materials transport and mixer unit conforming to the following:

1. The unit shall be equipped with calibrated proportioning devices for each ingredient added to the concrete mix. The unit shall be equipped with a working recording meter that is visible at all times and furnishes a ticket printout with the calibrated measurement of the mix being produced. If at anytime the mixer fails to discharge a uniform mix, production of concrete shall halt until any problems are corrected.
2. Each unit shall have a metal plate(s) attached in a prominent place by the manufacturer on which the following are plainly marked: the gross volume of the transportation unit in terms of mixed concrete, the discharge speed and the mass calibrated constant of the machine in terms of volume.
3. HPVMs shall be calibrated by a Department approved testing agency in accordance with the manufacturer's recommendations at an interval of every 6 months or a maximum production of 2500 cubic yards, whichever occurs first prior to use on the project. The yield shall be maintained within a tolerance of ± 1 percent and verified using a minimum 2 cubic feet container every 500 cubic yards or a minimum once per week.
4. The three cubic feet initially discharged from the truck shall be discarded and not used for concrete placement. Acceptance of the specified class of concrete shall comply with Section 217.08 of the Specifications except that the sample secured for acceptance testing will be taken after four cubic feet is discharged from the delivery vehicle. During discharge, the consistency as determined by ASTM C143 on representative samples taken from the mixer discharge at random intervals shall not vary more than 1 inch. Acceptance tests shall be performed on each load. If test data demonstrates that consistency of concrete properties are being achieved, the Engineer may reduce testing requirements.
5. The HPVM shall be operated by a person who is a certified operator by the HPVM manufacturer. Any equipment adjustments made during the on-site production of concrete shall be done under the direct on-site supervision of the producer's VDOT Concrete Plant and Field Certified Technician.

Each load of HPVM produced concrete shall be accompanied by a Form TL-28 signed by the producer's VDOT Certified Concrete Plant Technician or a designated company representative working under the direct on-site supervision of the producer's VDOT Concrete

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

Plant and Field Certified Technician. The form shall be delivered to the Inspector at the site of the work. Loads that do not carry such information or do not arrive in satisfactory condition shall not be used.

Section 217.07—Proportioning Concrete Mixtures is amended to replace the first paragraph with the following:

The Contractor is responsible for having a Certified Concrete Plant Technician available during batching operations, and a Certified Concrete Field Technician shall be present during placing operations.

Section 217.07—Proportioning Concrete Mixtures is amended to delete the third paragraph beginning with “**A Certified Concrete Batchers**”.

Section 217.07—Proportioning Concrete Mixtures of the Specifications is amended to replace the eleventh paragraph with the following:

Except for latex hydraulic cement concrete, concrete mixtures shall be developed and/or verified by any one of the following three options listed below.

The mix design(s) as determined by the respective option shall be valid provided there is no change in sources of aggregate, chemical admixtures, mineral admixtures or hydraulic cement. All concrete mixtures shall contain the minimum amount of mineral admixtures or combination thereof expressed as a percent of the total cementitious materials in accordance with Section 217.02(a). All quantities of materials shall be weighed in accordance with tolerances specified in Section 217.04. Neither the quantities of coarse or fine aggregates used in concrete production shall deviate by more than $\pm 5\%$ by weight from the batch weights of the approved mix design.

When low permeability concrete is specified, two 4 X 8 inch specimens shall be molded from concrete representing the proposed mix design and tested in accordance with VTM 112 to validate conformance. For trial batches, the tested permeability value shall be considered satisfactory provided it is 500 coulombs less than the specified maximum value for the class of concrete specified.

Option 1 - Prescriptive Method:

Mix proportions for normal, heavy weight, and lightweight concrete shall be established by the methods described in ACI 211, on an absolute volume basis, for the respective aggregate size and meeting all the requirements of Table II-17 for the class of concrete indicated. Aggregate properties obtained from the aggregate producer shall be used for design purposes.

Once the proposed mix design has been established, the contractor or their concrete supplier shall produce one 3-cubic yard production verification batch using the same type of equipment intended for use in supplying concrete to the Department. The proposed mix design will be considered acceptable provided that the plastic properties of the concrete are within the Department's specification limits for the given class of concrete. Strength tests of the verification batch must equal or exceed f'_c for the intended class of concrete.

Option 2 - Trial Batch Mix Design Method:

The minimum cementitious content requirement in Table II-17 shall be waived provided that the maximum water-cementitious ratio requirement of Table II-17 is met for the respective class of concrete. The required grading for fine and coarse aggregate shall be waived

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

provided the coarse aggregate meets the nominal maximum size as required in Table II-17 for the respective class of concrete.

The Contractor or their concrete supplier shall prepare a minimum of 3 trial concrete batches with differing cementitious materials contents over a range anticipated to encompass the design strength, f'_c , plus overdesign, and water-cementitious ratios encompassing the range permitted for the classes of concrete being evaluated. Trial batches may be produced in either;

Option 2A: Small scale laboratory batches, or

Option 2B: Truck batches with a minimum batch volume of 3 cubic yards each.

The plastic properties of the trial concrete batches shall meet the requirements for consistency and air content in Table II-17 and meet the additional requirements listed below:

- The concrete temperature of the trial batches, as batched and sampled, shall be a minimum of 68 degrees F.
- Air content of the trial batches shall within a range of -1.0 to + 1.5 percentage points of the median design air content for the classes of concrete being evaluated.
- Slump of the trial batches shall be within ± 1 inch of the maximum slump permitted for the class of concrete.

Three 4 X 8 inch test specimens shall be molded from each batch, cured in accordance with ASTM C 31 for acceptance specimens, and then compression tested at an age of 28 days. The strength results of these tests shall be plotted on a graph to establish the relationship between the water-cementitious ratio and the compressive strength. Alternately, the relationship can be established between the cementitious content and the compressive strength. The design water-cementitious ratio, or design cementitious content, can then be derived from the graph to satisfy the required design strength plus an appropriate overdesign to be designated as f'_{cr} . The required cementitious materials content determined from these tests can be interpolated from the established graph. If desired, the design water-cementitious ratio or cementitious content can be determined from a polynomial regression analysis of the plotted strength data.

Test results from prior trial concrete batches are acceptable for use provided that they represent the same material sources proposed for the Department work, meet the requirements for trial concrete batches as stated above and are less than 18 months old.

The required cementitious content to satisfy the strength requirement for the respective class of concrete shall be determined in accordance with either of the two following procedures:

1. When the concrete production facility has sufficient data to establish a production standard deviation (s), as described in **Documentation of Previous Field Experience or Production Standard Deviation (s)**. The cementitious content required to meet the design strength requirement, f'_{cr} , then the f'_{cr} shall be based upon the following equation:

$$f'_{cr} = f'_c + 3s$$

2. When the concrete production facility does not have a production standard deviation established the cementitious content required to meet the design strength requirement, f'_{cr} , then the f'_{cr} shall be based upon the following equation :

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

$$f'_{cr} = f'_c + 1700 \text{ psi.}$$

Once the proposed mix design has been established, the contractor or their concrete supplier shall produce one 3-cubic yard production verification batch using the same type of equipment intended for use in supplying concrete to the Department. The proposed mix design will be considered acceptable provided that the plastic properties of the concrete are within the Department's specification limits for the given class of concrete. Strength tests of the verification batch must equal or exceed f'_c for the intended class of concrete. The requirement for a production verification batch shall be waived when the trial batching is performed by Option 2B -Truck batches.

Option 3 - Documented Field Experience Method:

The minimum cementitious content requirement in Table II-17 shall be waived provided that the maximum water-cementitious ratio requirement of Table II-17 is met for the respective class of concrete. The required grading for fine and coarse aggregate shall be waived provided the coarse aggregate meets the nominal maximum size as required in Table II-17 for the respective class of concrete.

An existing concrete mixture shall be considered acceptable for use provided that the contractor or their concrete supplier has a satisfactory test record of previous field experience as described in:

Documentation of Previous Field Experience or Production Standard Deviation (s), and that the proposed concrete mixture meets the following requirements:

1. The water cementitious ratio of the proposed concrete mixture is less than or equal to the maximum water cementitious ratio specified for the respective class of concrete.
2. The documented average strength, f'_{cr} , equals or exceeds the design compressive strength f'_c for the respective class of concrete in accordance with the following equation: $f'_{cr} = f'_c + 3s$
3. The proposed concrete mixture contains the same aggregate sources, supplementary cementitious materials type, and admixture type as those used to establish the previous field experience test record.
4. The consistency (slump) and air content are within the specification limits for the respective class of concrete.

Documentation of Previous Field Experience or Production Standard Deviation (s)

An acceptable test record to document previous field experience and/or to establish a production facility standard deviation shall represent a minimum of 30 consecutive compressive strength tests results, encompass a production period of at least 45 days and test data not more than 18 months old. A test record of less than 30 tests, but not less than 15 tests, shall be permitted provided a modification factor is applied to the production facility sample standard deviation as shown below:

Multiply Standard Deviation by Modification Factor	
Number of Test	Modification Factor
15	1.16
20	1.08
25	1.03
30	1.00

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

The test record does not necessarily have to be based on Department projects provided that documentation of the source(s) of concrete strength test results accompanies the submittal.

Section 217.08—Acceptance is replaced with the following:

- (a) **Air Consistency Tests:** Air and consistency tests will be performed by the Department prior to discharge of concrete into the forms to ensure that specification requirements are consistently being complied with for each class of concrete. The sample secured for the tests shall be taken after at least two cubic feet of concrete has been discharged from the delivery vehicle. The two cubic feet discharged is not to be used as part of the test sample. Any deviation from sampling and testing procedures must be approved by the Engineer. The Contractor shall provide a receptacle conforming to the requirements of ASTM C31, Section 5.9, for the Department's use in obtaining the sample. If either determination yields a result that is outside of the allowable range for air content or consistence, the following procedure will be used:
1. The Engineer will immediately perform a recheck determination. If the results confirm the original test results, the load will be rejected.
 2. The Contractor's representative will be immediately informed of the test results.
 3. The Contractor's representative shall notify the producer of the test results through a pre-established means of communication.

The Engineer may perform any additional tests deemed necessary and reject all remaining material that fails the tests.

Entrained air content will be determined in accordance with the requirements of ASTM C231 or ASTM C173. Acceptance or rejection will be based on the results obtained from these tests.

In general, a mixture that contains the minimum amount of water consistent with the required workability shall be used. Consistency will be determined in accordance with the requirements of ASTM C143. Adding cement to loads previously rejected for excessive water content or consistency will not be permitted.

- (b) **Strength Tests:** The 28-day compressive strengths (f'_c) specified in Table II-17 are the strengths used in the design calculations. The Engineer will verify design strengths by tests made during the progress of the work in accordance with the requirements of ASTM C31 (Standard Practice for Making and Curing Concrete Test Specimens in the Field) and ASTM C39 (Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens) with the exception that the fresh concrete sample used for testing is to be secured after at least two cubic feet has been discharged from the delivery vehicle. The two cubic feet discharged is not to be used as part of the test sample. Any deviation from sampling and testing procedures must be pre-approved by the Engineer. The use of ASTM C42 (Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete) will be at the Engineer's discretion. If the 28-day design compressive strength (f'_c) test results do not conform to the strength requirements specified in Table II-17, immediate steps shall be taken to adjust the mixture design. In addition, the Engineer may require removal of or corrective measures be applied to any concrete that does not meet the requirements of Table II-17. If the concrete cylinder strength, f'_{cyl} , is less than the specified compressive strength found in Table II-17, the criteria in Table II-17A shall apply:

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

Table II – 17A Price Reduction or Action Taken due to f'_{cyl} not meeting the specification value f'_c listed in Table II-17

Condition	Concrete is a Pay Item	Concrete is <u>Not</u> a Pay Item
f'_{cyl} is greater than or equal to 98% f'_c	A	A
f'_{cyl} is greater than or equal to 90% f'_c and less than 98% f'_c	B	C
f'_{cyl} is less than 90% f'_c	D	D
f'_{cyl} is not available due to the Contractor's inappropriate handling and storage of specimens in accordance with ASTM C31	D	D

f'_c is the 28-day design compressive strength found in Table II-17.

f'_{cyl} is the actual average tested strength of the standard-cured concrete cylinder made and tested in accordance with ASTM C31 and ASTM C39.

A = full payment

B = pay reduction = $[(f'_c - f'_{cyl})/f'_c] \times \text{contract unit price for concrete per } yd^3 \times \text{number of } yds^3 \text{ the concrete represents}] \text{ or } \500 , whichever is greater.

C = pay reduction = $[(f'_c - f'_{cyl})/f'_c] \times 5 \times \text{Contractor's invoice price for concrete per } yd^3 \times \text{number of } yds^3 \text{ the concrete represents}] \text{ or } \500 , whichever is greater.

D = The Contractor shall submit an investigative plan stamped by a Virginia-licensed Professional Engineer outlining how the Contractor shall demonstrate that the in-place concrete meets the structural strength requirements of the design. For barriers, parapets, railings, etc., no reduction in concrete strength below $0.9f'_c$ shall be allowed. For all other applications, the investigative plan must be approved by the Department's Engineer prior to the execution of the investigation. All costs associated with this investigation shall be borne by the Contractor. After the investigation is completed, a report shall be submitted to the Engineer showing the results of the analysis, testing and conclusions of the Virginia-licensed Professional Engineer and recommendations for action proposed by the Contractor to be taken with the concrete that did not meet the strength requirements. The Department retains all rights to determine if the action proposed with regard to the concrete in question is acceptable. If the Department concurs with the proposed action and the concrete meets the structural strength requirements of the design and remains in place, any price reduction will be taken by Method B if the concrete is a pay item or Method C if the concrete is not a pay item. If the concrete does not meet the structural requirements of the design, the concrete shall be removed and replaced at no cost to the Department. The maximum penalty assessed for low strength concrete left

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

in place will be 10% as specified in Table II-17A not including the cost of the investigation and any corrective measures taken by the Contractor.

No calculated penalty less than \$500 will be assessed. The Contractor shall have the right to remove and replace concrete failing to meet specifications at the Contractor's cost.

Before concrete is placed, the Contractor shall provide a storage chamber at his expense for temporary storage of the Department's concrete cylinders. The contractor shall be responsible for maintaining the chamber such that the concrete test cylinders are kept in a continuously moist condition and within a temperature range of 60 degrees F to 80 degrees F. The chamber shall be equipped with a continuously recording thermometer accurate to ± 2 degrees F for the duration of concrete cylinder curing. The chamber shall be located in an area where the test cylinders will not be subject to vibration and shall be of sufficient size or number to store, without crowding or wedging, the required number of test cylinders as determined by the Contractor based on his plan of operations. Location of the chamber is subject to approval by the Engineer.

When use of high-early-strength hydraulic cement concrete is required, it shall conform to the requirements specified in Table II-17 except that the 28-day strength shall be obtained in 7 days. Up to 800 pounds per cubic yard of Type I, Type II or Type III cement may be used to produce high-early-strength concrete.

(c) **Concrete Temperature** shall be measured in accordance with the requirements of ASTM C1064.

(d) **Quality Assurance** for Low Permeability Concrete:

General:

At least two trial batches, using job materials, with permissible combination of cementitious materials shall be prepared, and test specimens shall be cast by the Contractor and tested by the Department for permeability and strength at least a month before the field application. The permeability samples shall be cylindrical specimens with a 4-inch diameter and at least 4-inches in length. Cylinders will be tested at 28 days in accordance with VTM 112. The test value shall be the result of the average values of tests on two specimens from each batch. Permeability values obtained from trial batches shall be 500 coulombs below the maximum values specified in Table II-17 of the Specifications to be acceptable.

Acceptance Tests:

For each set of cylinders made for compressive strength tests, two additional cylinders shall be made for the permeability test. The Department will be responsible for making and testing all permeability test specimens.

If the average permeability test result is equal to or less than the value for the specified class of concrete in Table II-17, then full payment will be made for the lot the average permeability test result represents. However, if the average permeability test result exceeds the coulomb value in Table II-17, payment for that lot of concrete shall be reduced by 0.005 percent for each coulomb above the coulomb value in Table II-17 multiplied by the bid item cost of the concrete times the number of cubic yards or cubic meters of concrete in the lot. The reduction in price will not exceed 5 percent of the bid price of the concrete. Any concrete with a coulomb value that exceeds the maximum required in Table II-17 by 1000 coulomb will be rejected. However, bridge deck concrete

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

with any coulomb value exceeding the maximum required by over 1000 coulomb may be accepted by the Engineer at 95 percent of the bid price if the concrete in question has the required strength and meets other specification requirements, and the Contractor applies, at his own expense, an approved epoxy concrete overlay to the top of the entire deck. In such case deck grooving will not be required. Epoxy overlays over latex overlays will not be permitted. The adjustment to the roadway grade shall be made as required by the Engineer at the Contractor's expense.

Similarly, concrete in abutments and pier caps with coulomb value exceeding the maximum required in Table II-17, by more than 1000 coulomb may be accepted at 95 percent of the bid price if it has the required strength and meets other specification requirements, and the Contractor applies at his own expense, one coat of Type EP-3B and one coat of EP-3T in conformance with the requirements of Section 243.02 of the Specifications, on top of the pier cap or abutment seat.

Section 217.09(b) Ready Mixed Concrete is amended to replace the second paragraph with the following:

Each load of transit or shrink-mixed concrete shall be accompanied by Form TL-28 signed by the VDOT Certified Concrete Field Technician or a designated company representative working under the direction of the VDOT Certified Concrete Field Technician. The form shall be delivered to the Inspector at the site of the work. Loads that do not carry such information or that do not arrive in satisfactory condition shall not be used.

Section 217.09(b) Ready-Mixed Concrete is amended to replace the fourth paragraph and the table with the following:

Each batch of concrete shall be delivered to the site of work and discharged within 90 minutes of the time the cement is introduced into the mixture unless approved otherwise by the Engineer.

Section 217.09(b)1. Transit mixing is amended to replace the first paragraph with the following:

1. **Transit mixing:** Concrete shall be mixed in a truck mixer. Mixing shall begin immediately after all ingredients are in the mixer and shall continue for at least 70 revolutions of the drum or blades at the rate of at least 14 but no more than 20 revolutions per minute.

GUIDELINES — FOR USE WHEN RIPRAP IS REQUIRED.

SS41401-0310

January 25, 2010

VIRGINIA DEPARTMENT OF TRANSPORTATION
2007 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS

SUPPLEMENTAL SECTION 414—RIPRAP

SECTION 414—RIPRAP of the Specifications is amended as follows:

Section 414.04—Measurement and Payment is amended to replace the ninth and tenth paragraphs with the following:

Riprap will be paid for at the contract unit price. This price shall include furnishing and placing riprap, including welded wire fabric, mortar, or grout; excavation; and riprap bedding. These prices shall include geotextile bedding material when required. The price bid shall include preparing the surface, furnishing and installing geotextile bedding material, overlaps, repair work, and excavating and backfilling toe-ins.

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

GUIDELINES — FOR PROJECTS REQUIRING CG-12 DETECTABLE WARNING SURFACE**S504B01-0314****VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
CG-12 DETECTABLE WARNING SURFACE**

September 18, 2013

I. DESCRIPTION

This work shall consist of providing all labor, tools, equipment, and materials required to furnish and install detectable warning surfaces in the location(s) specified on the plans or in the proposal. The Contractor shall perform the work according to the details shown on the plans or in this special provision, Section 504 of the Specifications, and as directed by the Engineer.

II. MATERIALS

Materials shall conform to the requirements of Section 504 of the Specifications except as follows:

Permanent, durable materials suitable for heavy traffic outdoor areas or concrete pavers approved by the Department may be used to construct the detectable warning surfaces where called for in the plans and other contract documents. Concrete paver units shall conform to the current ASTM C936 specifications and the details and requirements shown in the plans. Other durable materials shall be in accordance with Department approved manufacturer's design and specification requirements.

Products not on the Departments Materials Approved Product list shall be submitted to the Standards & Special Design Section and the appropriate District Materials Engineer for approval prior to use.

All detectable warning surfaces shall meet the ADA Standards as set forth by the United States Access Board.

The detectable warning shall be "safety yellow" unless otherwise noted in the plans or directed by the Engineer.

When visual contrast other than "safety yellow" is specified in the plans or contract documents, the *detectable warning* surfaces shall contrast visually with adjacent walking surfaces either light-on-dark, or dark-on-light. Verification of visual contrast is required prior to installation.

III. PROCEDURES

Construct sidewalk ramp according to Section 504 of the Specifications except for detectable warning/truncated domes that shall be furnished or constructed in accordance with the details in this specification, the manufacturer's recommendations, the Standard Drawings and the Plans.

All permanent installations of detectable warning surfaces shall be "wet set" in freshly placed concrete.

Surface mounted detectable warning surfaces are permitted only for temporary installations where the detectable warning will be in service 6 months or less.

The Contractor shall provide the Department with the manufacturers installation instructions.

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

IV. MEASUREMENT AND PAYMENT

CG-12 Detectable Warning Surface will be measured in square yards and paid for at the contract unit price per square yard, complete-in-place. This price shall be full compensation for furnishing and installing approved truncated dome finished materials including but not limited to concrete pavers, other Department approved materials, integral visual contrast, dowels and all other labor, tools, equipment, materials and incidentals necessary to fully complete the work.

Payment will be made under:

Pay Item	Pay Unit
CG-12 Detectable Warning Surface	Square yard

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

GUIDELINES — PROJECTS REQUIRING SIGNS, SIGNALS, LIGHTING OR NAVIGATIONAL LIGHTS.

SS70005-0815

April 15, 2015

VIRGINIA DEPARTMENT OF TRANSPORTATION
2007 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS**SUPPLEMENTAL SECTION 700—GENERAL****SECTION 700—GENERAL** of the Specifications is amended as follows:**Section 700.02(g)** is replaced with the following:

- (g) **Steel for structural support of light poles and traffic control devices** shall conform to Section 226 and shall be fabricated, welded, and inspected in accordance with Section 407.

Section 700.02(i) is amended to replace “**Poles, posts, and overhead and bridge-mounted sign structures**” in the first sentence with “**Poles, posts, and overhead sign structures**”.

Section 700.02(i) is amended to replace 1, 2, 3, and 4 and the next three paragraphs including the bullets with the following:

1. **Conventional and offset lighting poles** shall be steel or aluminum.
2. **Overhead sign structures, signal poles (mast arm and strain), and high-mast lighting poles** shall be steel.
3. **Pedestal poles** with a nominal diameter of more than 2 inches shall be steel or aluminum. Pedestal poles 2 inches and less in nominal diameter shall conform to the requirements of Section 238 for metal conduit.
4. **Wood for wooden posts and poles** shall conform to Section 236 and shall be treated in accordance with Section 236. Wood items shall be cut to size or design before treatment.
5. **Ground Mounted Sign Structures** shall be fabricated from galvanized steel. Square tube posts shall conform to the requirements of ASTM A1011, Grade 50 except the yield strength after cold-forming shall be 60,000 psi minimum for 12 and 14 gage and 55,000 psi minimum for 10 gage posts. Posts (inside and outside) shall be galvanized in accordance with the requirements of ASTM A653, Coating Designation G-90. Square tube sign posts shall have 7/16-inch (+/- 1/64-inch) openings or knockouts spaced 1-inch on centers on all four sides.

The design of traffic control device structures and foundations shall conform to the requirements of the edition of AASHTO's *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals* specified in the Structure & Bridge Division S&B-IIM-90 Memorandum (VDOT Modifications to AASHTO's *Standard Specifications*) in effect at the time of advertisement.

Steel poles, posts, and overhead sign structures shall be hot-dip galvanized after fabrication. Except when shop painting is required, steel poles and posts shall be given one shop coat of primer and two field coats of paint and the galvanization finish of overhead sign structures shall be field treated for paint retention and two coats of paint applied.

Section 700.02(k) Breakaway Support Systems is replaced with the following:

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

Breakaway support systems shall be tested and certified to conform to the requirements of NCHRP Report 350, or be Manual for Assessing Safety Hardware (MASH) certified. The Contractor shall provide a certification letter stating the brands and models of breakaway systems planned for use have been tested and are in conformance with this requirement. Breakaway couplers shall not be used. The following systems shall be used when breakaway supports are specified on the plans:

1. **Frangible bases** and skirt covers shall be aluminum.
2. **Slip bases** shall be galvanized steel or other approved noncorrosive metal.

Section 700.04(a)1. Grounding Electrodes is amended to replace the seventh paragraph with the following:

- The Contractor shall install a junction box at the primary grounding electrode location for access to the electrode for connection and testing. Grounding electrode conductors shall be installed under the bottom flange of the junction box. The grounding electrode shall be centered in the bottom of the junction box with a minimum of 6 inches exposed. The junction box cover shall have the letters "VDOT ELEC" cast in the depression on the top.

Section 700.04(a)2. Grounding electrode testing is replaced with the following

2. **Grounding electrode testing:** The Contractor shall test the primary grounding electrodes after each 10-foot grounding electrode and/or section thereof is installed using the fall of potential (three-point measurement) method. After the primary grounding electrode is installed and tested, the Contractor shall connect to the augmented electrode(s) to conduct a system test. The Contractor shall disconnect the grounding electrode conductor from the service equipment ground bus and bonding bushing before testing the grounding electrodes/system. The Contractor shall test the grounding electrode as required by the manufacturer's instructions for the type of earth testing equipment. The Contractor shall record the readings on a form provided by the VDOT Regional Traffic Engineering Office. The completed form shall be signed and submitted to the Engineer after installation of the electrical service grounding system.

Section 700.04(c) Concrete Foundations is amended to replace the third paragraph with the following:

The Contractor shall furnish the foundation designs for signal poles, high-mast lighting poles, and overhead sign structures to the Engineer for review and acceptance. Designs shall indicate the cubic yard quantity of concrete required for constructing the foundations. Foundations shall be designed for the structure it is supporting and the proposed loads shown on the plans.

The Contractor shall perform at least one test bore, as approved by the Engineer, at each foundation location to determine the subsurface conditions of the proposed site before designing the foundation. Test bores shall be performed in accordance with any of the following three referenced methods:

1. ASTM D 420, ASTM D 1452, and ASTM D 1586.
2. ASTM D 3441.
3. ASTM D 4719.

Section 700.04(g)1. Electrical service and lighting conductor identification is amended to replace the fifth paragraph with the following

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

2-wire circuits, 120 Volts; 3-wire circuits, 120/240 Volts; 3-phase, 4-wire wye circuits, 208/120 Volts and; 3-phase, 4-wire delta circuits, 240 Volts

Circuit Designation	Color Code
Phase A or Line A	Black
Phase B or Line B	Red or orange*
Phase C	Blue
Grounded Conductor (Neutral)	White or gray** (see exception above)
Equipment Grounding Conductor	Bare, green, or green with one/more yellow stripes

3-phase, 4-wire wye circuits, 480/277 Volts; 3-phase, 3-wire delta circuits, 480 volts

Circuit Designation	Color Code
Phase A	Brown
Phase B	Orange
Phase C	Yellow
Grounded Conductor (Neutral)	White or gray** (see exception above)
Equipment Grounding Conductor	Bare, green, or green with one/more yellow stripes

* For 3-phase, 4-wire delta circuits, Phase B shall be the high leg and shall be orange.

** For outer covering of conductors of different systems that is contained within the same enclosure, refer to Article 200 of the NEC.

Section 700.04(h) Conduit Systems is amended to include the following:

The Contractor shall install a bushing to protect the conductor cable from abrasion when a conduit enters a junction box, fitting, or other enclosure, unless the design of the junction box, fitting, or enclosure is such as to afford equivalent protection of the conductor cable.

Section 700.04(h)2. Buried conduit systems is amended to replace the second paragraph with the following:

The Contractor shall install conduit by the use of an approved directional boring method when conduit is to be installed under an existing roadway, entrance, or fixed object and open cutting is not allowed. Conduit for the directional boring method shall be Polyvinylchloride (PVC) or High-Density Polyethylene (HDPE) designed specifically for the directional boring operation. When the plans show more than one conduit at a location to be installed by directional boring, with the Engineer's approval the Contractor may elect to install multiple conduits into a single bore at no additional cost to the Department.

MAXIMUM PILOT OR BACK REAMER BIT DIAMETER WHEN ROTATED 360°	
NOMINAL INSIDE PIPE DIAMETER INCHES	BIT (REAMER) DIAMETER INCHES
1 - 2"	4" BORE HOLE
2 - 2"	5" BORE HOLE
3 - 2"	8" BORE HOLE
1 - 3"	5" BORE HOLE
2 - 3"	6 ½ " BORE HOLE
3 - 3"	8" BORE HOLE
1 - 4"	6 ½ " BORE HOLE

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

The Contractor shall use an Engineer approved stabilizing agent mixed with potable water to create the drilling fluid (mud slurry) for lubrication and soil stabilization. The fluid viscosity may vary to best fit the soil conditions encountered. The Contractor shall not use any chemicals or polymer surfactants in the drilling fluid without written consent from the Engineer. The Contractor shall certify to the Engineer in writing that any chemical added to the drilling fluid is environmentally safe and not harmful or corrosive to the conduit system.

The Contractor may elect to use the jacked method to install a pipe sleeve for installation of the required conduit at no additional cost to the Department.

If an obstruction is encountered during the directional boring or jacking operation that requires abandonment of the bore hole, the Contractor shall immediately backfill the hole with flowable fill for its full length at no additional cost to the Department.

Section 700.04(i) Junction Box Covers is replaced with the following:

(i) **Junction Boxes** shall be installed as follows:

The Contractor shall excavate the junction box site to a depth equal to the height of the junction box plus at least 12 inches to allow for the installation of aggregate bedding material. The width of the excavation shall be 6 to 8 inches wider than the junction box to allow proper aggregate backfill.

Bedding material shall conform to Section 203 and be No. 68, No. 78, or No. 8 aggregate or crushed glass conforming to No. 78, or No. 8 gradation requirements. Aggregate shall be at least 12 inches in depth and entirely cover the bottom of the excavated area for the junction box. The Contractor shall level and tamp the bedding aggregate to compact it prior to installing the junction box.

Junction boxes shall be installed and leveled to grade prior to backfilling.

Prior to backfilling the interior of polymer concrete junction boxes (JB-S1, JB-S2 and JB-S3) shall be braced with 2 inch by 4 inch lumber using two braces across the width and one brace across the length of the box or braced as required by the junction box manufacturer. Bracing shall be installed to facilitate removal once backfilling and compaction activities have been completed. The Contractor shall remove internal bracing after backfilling and compacting operations have been completed.

The cover of the junction box shall be installed prior to backfilling.

The junction box shall be backfilled and compacted around its perimeter utilizing six to eight inch horizontal lifts to the elevation where the concrete collar is to begin. Once the concrete collar has cured the remaining area around the collar shall be backfilled and compacted as stated above. Compaction density shall be to at least ninety percent of the theoretical maximum density as defined in Section 101.02 of the Specifications. The Contractor shall use a mechanical tamping device to compact the backfill material and soil, layer by layer around the perimeter of the junction box. The wheel of a backhoe or other type vehicle shall not be used for compaction of backfill and soil. The internal bracing shall be removed after backfilling and compaction have been completed. The area around the junction box shall be graded and restored according to the plans and as stated in the pertinent Specifications.

Junction boxes shall not be installed or backfilled where there is standing water. Backfill material shall be free of large stones, wood or other debris and shall not be saturated with water.

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

If a special tool or wrench is required to remove the junction box cover, the Contractor shall furnish the Engineer with five such tools.

Section 700.04—Procedures is amended to include the following:

(k) **Anchor Bolts**

Foundations for traffic control devices shall have a bolt template positioned for the correct orientation of the structure with respect to the structure's location and roadway alignment and to maintain the anchor bolts vertically (plumb) and level during construction.

Bolt and/or anchor nut covers shall not be installed on any traffic control device structures, unless otherwise specified on the plans.

Anchor bolts in double-nut connections shall extend a minimum of 1/4 inch past the second top nut.

The threaded portion of the anchor bolts shall be lubricated with beeswax, the bolt manufacturer's recommended lubricant, or other lubricant as approved by the Engineer to assist in proper tensioning before the structure is installed.

Double-nut connections installation procedure: A minimum of three nuts and two hardened washers shall be provided for each anchor bolt.

1. If anchor bolt(s) are not plumb (vertical), determine if beveled washer(s) may be required prior to erection of the structure. Beveled washers shall be used on top of the leveling nut and/or under the first top nut if any face of the base plate has a slope greater than 1:20 and/or if any nut could not be brought in firm contact with the base plate.
2. Clean and lubricate the exposed thread of all anchor bolts, nuts, and all bearing surfaces of all leveling nuts. Re-lubricate the exposed threads of the anchor bolts and the threads of the nuts if more than 24 hours has elapsed since earlier lubrication, or if the anchor bolts and nuts have become wet since they were first lubricated.
3. Verify that the nuts can be turned onto the bolts the full length of the threads by hand.
4. Turn the leveling nuts onto the anchor bolts and align the nuts to the required elevation shown on the shop drawings. The maximum distance between the bottom of the leveling nut and the top of the foundation shall be one inch (1").
5. Place structural hardened washers on top of the leveling nuts (one washer corresponding to each anchor bolt).
6. The post or end frame shall be plumbed or aligned as shown on the shop drawings. The maximum space between the bottom of the base plate and the top of the foundation shall be the diameter of the anchor bolt plus one (1) inch. Place structural hardened washers on top of the base plate (one washer corresponding to each anchor bolt), and turn the first top nuts onto the anchor bolts.

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

7. Tighten first top nuts to a snug-tight condition in a star pattern. Snug-tight is defined as the maximum nut rotation resulting from the full effort of one person using a 12-inch long wrench or equivalent. A star tightening pattern is one in which the nuts on opposite or near-opposite sides of the bolt circle are successively tightened in a pattern resembling a star.
8. Tighten bottom leveling nuts to a snug-tight condition in a star pattern.
9. At this point, verify again if beveled washers are necessary using the criteria from step 1. If a beveled washer is required, remove the structure if necessary, add the beveled washer(s) and retighten first top nuts and bottom leveling nuts (in a star pattern) to a snug-tight condition.
10. Mark the reference position of each first top nut in a snug-tight condition with a suitable method on one flat surface of the nut with a corresponding reference mark on the base plate at each bolt before final tightening of the first top nuts. Then rotate the first top nuts incrementally to one half the required nut rotation specified in Table 1 using a star pattern. Rotate the first top nuts again, using a star pattern, to the full required nut rotation specified in Table 1. For example, if total rotation from snug tight is 1/6 turn (60°), rotate 30° in each cycle.

Table 1

Anchor Bolt Diameter, (in.)	Nut Rotation beyond Snug - Tight	
	ASTM F 1554 Grade 36 (M314)	ASTM F 1554 Grade 55 (M 314)
≤1½	1/6 turn (60°)	1/3 turn (120°)
>1½	1/12 turn (30°)	1/6 turn (60°)

Nut rotation is relative to anchor bolt. Anchor bolt nut tensioning shall not exceed plus 20°.

Unified Thread Standard (UNC) tensioning is applicable.

The Engineer will not permit the use of lock nuts and/or split washers with anchor bolts.

11. The Contractor shall inspect tightened anchor bolt connections by the use of a calibrated torque wrench in the presence of the Engineer. The torque wrench shall be used to verify that a torque at least equal to the verification torque as provided in Table 2 has been achieved. A minimum of every other bolt shall be inspected.

Table 2

Anchor Bolt Diameter, (in.)	Verification Torque	
	ASTM F 1554 Grade 36 (M314) Tension/Torque kips/ft-lbs.	ASTM F 1554 Grade 55 (M 314) Tension/Torque kips/ft-lbs.
1	18 / 180	27 / 270
1 1/4	28 / 350	44 / 550

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

1 1/2	41 / 615	63 / 945
1 3/4	55 / 962	86 / 1,505
2	73 / 1,460	113 / 2,260
2 1/4	94 / 2,115	146 / 3,285
2 1/2	116 / 2,900	180 / 4,500
2 3/4	143 / 3,932	222 / 6,105
3	173 / 5,190	269 / 8,070
3 1/4	206 / 6,695	320 / 10,400
3 1/2	242 / 8,470	375 / 13,125
3 3/4	280 / 10,500	435 / 16,312
4	321 / 12,840	499 / 19,960

12. Install second top nut on each bolt to snug tight.
13. After all prior steps are completed and all elements of the structure are fully erected, the Contractor shall perform an ultrasonic test on all anchor bolts in accordance with ASTM E114 - Ultrasonic Pulse Echo Straight Beam Testing by the Contact Method. Ultrasonic testing personnel shall be qualified in accordance with ASNT SNT-TC-1A Level II and certified by the VDOT Materials Division. Equipment shall be qualified in accordance with AWS D1.5 Section 6, Part C. Anchor bolts shall have no indications that are above 10% Full Screen Height at the prescribed scanning level. All indications shall be noted on the test report and submitted to the Engineer and the VDOT Materials Division. A copy of the report for structures with and without indications shall be submitted to the District Bridge Office and the Engineer.

Section 700.05—Measurement and Payment for Overhead and bridge-mounted sign structures is replaced with the following:

Overhead sign structures will be measured in units of each and will be paid for at the contract unit price per each. This price shall include structural units and supports, hand holes and covers, grounding lugs, electrical systems including conduit and fittings, and identification tags.

Section 700.05—Measurement and Payment for, Junction boxes is replaced with the following:

Junction boxes will be measured in units of each and will be paid for at the contract unit price per each. This price shall include concrete collars, frames and covers, tools to remove the cover, ground rods, ground conductors, grounding lugs, knockouts, cable racks, bracing, aggregate, excavating, backfilling, compacting, disposing of surplus and unsuitable material, and restoring disturbed areas.

Section 700.05—Measurement and Payment for Sign Posts is replaced with the following:

VA sign posts will be measured in linear feet for the size specified and will be paid for at the contract unit price per linear foot for the size specified. This price shall include posts, clamps, identification tags, foundation stub post, and breakaway base assemblies.

VIA sign posts will be measured in linear feet for the size specified and will be paid for at the contract unit price per linear foot for the size specified. This price shall include posts, clamps,

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

identification tags, foundation stub post, breakaway base assemblies, hinge plate assemblies and fuse plate assemblies.

Square tube sign posts will be measured in linear feet and will be paid at the contract unit price per linear foot for the size and type specified. This price shall include posts, clamps and breakaway base assemblies.

Section 700.05—Measurement and Payment is amended to add the following:

Square tube post foundations will be measured in units of each and will be paid for at the contract unit price per each for the type specified. This price shall include anchor sleeve, post sleeve, slip base assembly, soil stabilizing plate, drive tube foundation, concrete, hardware, excavating, backfilling, compacting, disposing of surplus and unsuitable material, and restoring disturbed areas.

VA sign structure foundations will be measured in units of each and will be paid for at the contract unit price per each for the size specified. No payment will be made for concrete in excess of the cubic yards of concrete required by the foundation design unless otherwise approved by the Engineer. When excess concrete is approved by the Engineer, the additional concrete will be paid for in cubic yards for the invoiced material cost only. This price shall include concrete, reinforcing steel, excavating, backfilling, compacting, disposing of surplus and unsuitable material, and restoring disturbed areas.

VIA sign structure foundations will be measured in units of each and will be paid for at the contract unit price per each for the size specified. No payment will be made for concrete in excess of the cubic yards of concrete required by the foundation design unless otherwise approved by the Engineer. When excess concrete is approved by the Engineer, the additional concrete will be paid for in cubic yards for the invoiced material cost only. This price shall include concrete, reinforcing steel, excavating, backfilling, compacting, disposing of surplus and unsuitable material, and restoring disturbed areas.

Payment will be made under:

Pay Item	Pay Unit
VA sign post (size)	Linear foot
VIA sign post (size)	Linear foot
Square tube sign post (size and type)	Linear foot
Square tube post foundation (type)	Each
VA sign structure foundation (size)	Each
VIA sign structure foundation (size)	Each

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

GUIDELINES — FOR PROJECTS REQUIRING PAVEMENT MARKINGS OR MARKERS.**SS70402-0815**

April 15, 2015

VIRGINIA DEPARTMENT OF TRANSPORTATION
2007 ROAD AND BRIDGE SUPPLEMENTAL SPECIFICATIONS**SUPPLEMENTAL SECTION 704—PAVEMENT MARKINGS AND MARKERS****SECTION 704—PAVEMENT MARKINGS AND MARKERS** of the Specifications is amended as follows:**Section 704.02—Materials** is amended to include the following:

All pavement markers and pavement marking materials shall be selected from the *VDOT Materials Division Approved Products List*

Section 704.03—Procedures is amended to replace the second sentence of the second paragraph with the following:

Pavement markings installations, including symbol/message markings, shall be completed within the time limits herein on roadways where the pavement markings have been removed or obscured and the roadway is reopened to traffic, unless otherwise directed by the Engineer.

Section 704.03—Procedures is amended to replace the third through fifth paragraphs with the following:

Pavement marking installation on interstates, and other freeways (fully limited-access divided roadways with two or more lanes per direction) with posted speed limit of 55 mph and greater, , shall be completed within the workday during which the pavement markings were removed, eradicated, or obscured prior to reopening the lanes to traffic.

Pavement marking installation on non-freeway roads having traffic volumes of 10,000 ADT or more shall be completed within 24 hours after the end of the workday on which the existing pavement markings were removed, eradicated, or obscured.

Pavement marking installation on non-freeway roads having traffic volumes between 3,000 and 10,000 ADT shall be completed within 48 hours after the end of the workday on which the existing pavement markings were removed, eradicated, or obscured.

Pavement marking installation on non-freeway roads having traffic volumes of less than 3,000 ADT shall be completed within 72 hours after the end of the workday on which the existing pavement markings were removed, eradicated, or obscured.

Section 704.03(a) Pavement Markings is amended to replace the seventh through eleventh paragraphs with the following:

Pavement message/symbol markings shall be installed using Type B Class I, II, or IV markings unless indicated otherwise in the contract documents and shall include, but not be limited to school zone markings, railroad crossing markings, accessible (disabled) parking symbols, turn lane (elongated) arrows, word messages, etc.

The Contractor shall protect the public against potential damages that may result from pavement marking operations. The Contractor shall be responsible for the complete preparation of the pavement surface, including, but not limited to, removing dust, dirt, loose particles, oily residues, curing compounds, concrete laitance, residues from eradication, and other foreign matter

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

immediately prior to installing pavement markings. The pavement surface shall be dry when tested in accordance with VTM-94 at the time of permanent pavement marking installation. The Contractor shall be responsible for providing the apparatus indicated in VTM-94 that are needed to perform the moisture test.

Liquid markings shall be applied so as to prevent splattering and overspray, and shall be protected from traffic until track free by the use of traffic control guarding or warning devices as necessary. If a vehicle crosses a pavement marking and tracks it, or if splattering or overspray occurs, the affected marking and resultant tracking, overspray or splattering shall be immediately eradicated, the affected pavement and other surfaces cleaned and prepared, and new markings applied at the Contractor's expense.

Equipment shall be thoroughly cleaned between changes in colors or types of materials.

Pavement markings shall have clean and well-defined edges without running, bleeding or deformation. Markings shall be uniform in appearance, free of waviness; (the edge of the marking not varying more than 1/4 inch in three feet from a straight line or more than one inch in fifty feet for a maximum distance of 500 feet) shall be straight on tangent alignment; and shall be on a true arc on curved alignment.

The widths of pavement markings shall not deviate more than 1/4 inch on tangent sections, nor more than 1/2 inch on curves from the required width. The length of the gap and the length of the individual stripes that form skip lines shall not deviate more than two inches from their required lengths. The length of the gap and individual skip line shall be of such uniformity throughout the entire length of each that a normal striping machine shall be able to repeat the pattern and superimpose additional striping upon the existing marking.

Glass beads shall be applied at the rate specified herein and shall be evenly distributed over the entire surface of the marking. The Contractor shall apply beads to the surface of liquid markings with a bead dispenser attached to the applicator that shall uniformly dispense beads simultaneously on and into the just-applied marking. The bead dispenser shall be equipped with a cut-off control synchronized with the applied marking material cut off control so that the beads are applied totally on the marking. Beads shall be applied while the liquid marking is still fluid. Approximately 70 percent of the beads shall be buried in the marking, and the remaining 30 percent shall be 50 to 60 percent embedded in the marking's surface, unless otherwise specified by the pavement marking manufacturer. Beads installed on crosswalks and stop lines on roadways with curbs only (no gutter) may be hand applied for two feet at the end of each line next to the curb with 100 percent of the beads embedded 50 to 60 percent into the marking's surface.

The Contractor shall provide written certification that all preformed symbols/characters, or the templates used to create such symbols/characters for non-preformed markings, match the size and shape specified in the *VDOT Road And Bridge Standards* and the contract documents.

Section 704.03(a)2 Type B Markings is amended to replace the second paragraph with the following:

Non-truck mounted equipment for application of thermoplastic material shall be of the screed extrude type with a screw-drive or shall be self-propelled and regulated to allow for calibration of the amount of material applied. Non-truck mounted equipment for application of epoxy resin material shall also be self-propelled and regulated to allow for calibration of the amount of material applied.

Section 704.03(a)2a Thermoplastic (Class I) is replaced with the following:

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

Thermoplastic (Class I) material shall be applied by screed extrusion, ribbon gun, or spray equipment. Alkyd thermoplastic may be applied directly after the paving operations; however, hydrocarbon thermoplastic shall not be applied less than 30 days after the paving operations.

Alkyd and hydrocarbon materials shall not be mixed together. The Contractor shall ensure equipment is thoroughly cleaned when colors or types of material are changed.

Thermoplastic shall not be applied over existing pavement markings of other materials unless the existing marking is 90 percent worn away, obscured, or eradicated. Thermoplastic shall only be applied over existing thermoplastic markings if the existing thermoplastic markings are clean and not chalky, chipped or powdery in appearance or condition.

Section 704.03(a)2b Polyester Resin (Class II) is replaced with the following:

Preformed Thermoplastic (Class II) material shall be installed per the manufacturer's recommendations. When markings are installed on hydraulic cement concrete pavement, primer shall be applied first in accordance with manufacturer's requirements.

Additional glass beads shall be applied evenly to the surface of the preformed thermoplastic material for messages and symbols immediately after installation at the rate of 7 pounds per 100 square feet to facilitate embedment while the material is in a softened state using manufacturer approved equipment, bead package, and methods.

Section 704.04—Measurement and Payment is amended to replace paragraphs two and three with the following:

Pavement message markings will be measured in units of each or linear feet and will be paid for at the contract unit price per each per location or linear foot as applicable for the size and/or type and class specified. This price shall include the pavement marking material, surface preparation, quality control tests, daily log, guarding devices, primer/adhesive, and glass beads.

Pavement markers will be measured in units of each for the type specified and will be paid for at the contract unit price per each. This price shall include pavement cutting, surface preparation, primer if required, prismatic retroreflectors, adhesive, and castings.

Payment will be made under:

Pay Item	Pay Unit
Pavement message marking (Symbol or Text, Size, Type and Class)	Each or linear foot
(Type) Pavement marker (type pavement)	Each

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

Section 704—PAVEMENT MARKINGS AND MARKERS of the Specifications is amended as follows:

Table VII-1 Pavement Markings is replaced with the following:

**TABLE VII-1
Pavement Markings**

Type	Class	Name	Surface Temp. at Time of Application	Film Thickness (mils)	Pavement Surface	Application Limitations
A		Traffic paint	50°F+	15 ± 1 when wet	AC HCC	May be applied directly after paving operations
B	I	Thermoplastic Alkyd	50°F+	90 ± 5 when set	AC HCC	May be applied directly after paving operations
	I	Thermoplastic Hydrocarbon	50°F+	90 ± 5 when set	AC HCC	Do not apply less than 30 days after paving operations
	II	Preformed Thermoplastic	50°F+	120-130	AC HCC	Manufacturer's recommendations
	III	Epoxy resin	50°F+	20 ± 1 when wet	AC HCC	Pavement surface needs to be at least 1 day old
	IV	Plastic-backed preformed Tape	(Note 1)	60 - 90	AC HCC	Manufacturer's recommendations
	VI	Profiled preformed Tape	(Note 1)	(Note 1)	AC HCC	Manufacturer's recommendations
	VII	Polyurea	(Note 1)	20 ± 1 when wet	AC HCC	Manufacturer's recommendations
D	II	Removable tape	(Note 1)	(Note 1)	AC HCC	Temporary (Construction) pavement marking
E		Removable Black tape (Non-Reflective)	(Note 1)	(Note 1)	AC	Temporary (Construction) pavement marking for covering existing markings
F	I	Temporary paint	(Note 1)	40 max	AC HCC	Temporary (Construction) pavement marking

Note 1: In accordance with manufacturer's recommendation.

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

cu703000a Saw Cut (Loop Detectors)**GUIDELINES – ASPHALT PROJECTS WHEN REQUIRED BY THE DESIGNER (USUALLY HAMPTON ROADS DISTRICT).**

SAW CUT — Section 703.04—Measurement and Payment of the Specifications is amended to replace the ninth paragraph (**Saw cuts**) with the following:

Saw cut will be measured in linear feet for the width specified and will be paid for at the contract unit price per linear foot. This price shall include cutting, cleaning, drilling, disposing of surplus material, furnishing and installing backer rods, and loop sealant material.

Pay Item**Pay Unit**

Saw Cut (Width)

Linear foot

10-2-08a (SPCN)

*These SPECIFICATIONS REVISIONS are subject to change on short notice.

**CITY OF NORFOLK
LOCALLY ADMINISTERED
STATE/FEDERALLY FUNDED PROJECTS
PROJECT TECHNICAL SPECIFICATIONS**

SECTION C TABLE OF CONTENTS

SECTION 303- EARTHWORK	1-2
SECTION 407- STEEL STRUCTURES	3
SECTION 418- TIMBER STRUCTURES	4
SECTION 504- SIDEWALKS, STEPS AND HANDRAILS	5
SECTION 510- RELOCATING OR MODIFYING EXISTING MISCELLANEOUS ITEMS	6
SECTION 512- MAINTANING TRAFFIC	7-9
SECTION 513- MOBILIZATION	10
SECTION 601- SELECTIVE TREE REMOVAL, TRIMMING, AND CLEANUP	11
SECTION 602- TOPSOIL	12
SECTION 609- TREE WELLS AND TREE WALLS	13
SECTION 700- GENERAL TRAFFIC CONTROL DEVICES	14-15
SECTION 701- TRAFFIC SIGNS	16-17
SECTION 702- DELINEATORS	18

SECTION 303 – EARTHWORK

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

303.03 – Erosion and Siltation Control – is amended as follows:

Add the following to the end of the first paragraph:

All erosion control measures shall be in accordance with the Virginia Erosion and Sediment Control Handbook, the Virginia Drainage Manual, current editions, and the VDOT Road & Bridge Specifications (2007).

Add the following to the end of the second paragraph:

Additional inspections for E&S control shall be performed by the City of Norfolk Department of Planning and Community Development's Environmental Services Division Environmental Department as agents of the Public Works Department.

The Contractor shall exercise every reasonable precaution, including application of temporary and permanent environmental measures, throughout the duration of the project to control erosion and prevent eroded materials from leaving contract limits in addition to preventing siltation of rivers, streams, lakes, and impoundments. Such measures shall include, but are not limited to, the use of beams, dikes, dams, and sediment basins, and fiber mats, brush silt barriers, silt fences, netting, gravel or crushed stone, mulch, stage seeding, slope drains, inlet protection, and other methods.

Temporary and permanent erosion and siltation control measures shall all be applied to erodible material exposed by an activity associated with the construction including local material sources, stockpiles, waste areas, and all haul roads.

Temporary measures shall be coordinated with the construction of permanent drainage facilities and other contract work to the extent practicable to assure economical, effective and continuous erosion and siltation control. The temporary and permanent drainage facilities shall be installed as soon as practicable, but shall be installed prior to commencement of earthwork or demolition. All drainage systems are to be kept free of eroded materials and siltation at all times, including drainage systems being constructed as part of this project. No compensation will be made for removal of eroded materials.

Inspect all temporary and permanent erosion and siltation control devices and measures for deficiencies prior to and immediately after each rainfall and at least daily during prolonged rainfall. Any deficiencies shall be immediately corrected by the Contractor. Failure on the part of the Contractor to adequately maintain all erosion and siltation control devices in a functional condition may result in the City of Norfolk representative notifying the Contractor in writing of the deficiencies.

In the event the Contractor fails to correct or to take appropriate actions to remedy the specified deficiencies within 24 hours after the receipt of such notification, the City of Norfolk reserves the right to take appropriate actions to require the Contractor to discontinue work in

other areas and to concentrate his efforts towards rectifying the specified deficiencies, or the City of Norfolk may proceed with adequate forces, equipment and materials to remedy the specified deficiencies and the entire cost of such work will be deducted from moneys due the Contractor.

303.06 – Measurement and Payment – is amended as follows:

Add the following to the end of (e) Erosion Control Items:

(e) Erosion Control Items

18. Temporary Tree Protection will be measured in linear feet, complete-in-place, excluding laps, and will be paid for at the contract unit price per LINEAR FOOT (LF). Pay item shall consist of all materials, labor and equipment required to furnish, install, maintain and remove tree protection, all in accordance with the contract drawings and specifications, as well as the *Virginia Erosion and Sediment Control Handbook*, 1992 edition.

++END OF SECTION++

SECTION 407– STEEL STRUCTURES

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

407.07– Measurement and Payment – add the following:

Steel Bollard will be measured in units of EACH (EA). Pay item shall consist of all materials including steel, concrete and paint, labor and equipment required to furnish and install galvanized steel bollards in accordance with the contract drawings and specifications.

++END OF SECTION++

SECTION 418 – TIMBER STRUCTURES

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

418.04 – Measurement and Payment – add the following:

Bridge Timber Handrail will be measured in linear feet, complete in place, and will be paid for at the contract unit price per LINEAR FOOT (LF). Pay item shall consist of all materials including timber and hardware, labor and equipment required to furnish and install bridge timber handrail in accordance with the contract drawings and specifications.

Timber Handrail will be measured in linear feet, complete in place, and will be paid for at the contract unit price per LINEAR FOOT (LF). Pay item shall consist of all materials including timber and hardware, labor and equipment required to furnish and install bridge timber handrail in accordance with the contract drawings and specifications.

++END OF SECTION++

SECTION 504 – SIDEWALKS, STEPS AND HANDRAILS

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

504.04 – Measurement and Payment

CG-12 Curb Ramp w/ Detectable Warning Surface will be measured and paid for in SQUARE YARDS (SY) and paid for at the contract unit price per square yard, complete-in-place. This price shall be full compensation for furnishing and installing approved truncated dome finished materials and ramp including but not limited to concrete, brick or concrete pavers, other Department approved materials, integral visual contrast, dowels and all other labor, tools, equipment, materials and incidentals necessary to fully complete the work. The depth of concrete shall be 7 inches for the entire ramp area. The type of VDOT standard sidewalk ramp shall be installed in accordance with the information and details provided in the latest approved version of the VDOT Road and Bridge Standards. Where sufficient space to install the ramp is not available, the Contractor shall submit a shop drawing of the proposed ramp solution that meets or exceeds ADA requirements to the Engineer for review and approval at least 14 days prior to construction. Any required adjustments to the elevation of junction boxes, manhole covers, and other utility appurtenances such that they are flush with the finished ramp shall be considered incidental to the unit price for CG-12 Detectable Warning Surface.

The truncated domes color shall be “Colonial Red” or approved equal.

Price shall also include compaction of soil, fill material and bedding material. Compaction of soil shall meet maximum density requirements, in accordance with ASTM D-1557. Under sidewalk ramps, compact top 12 inches of subgrade and each layer of fill or backfill material at 95 percent maximum density. Fill or backfill material shall be placed in lifts no greater than six inches.

++END OF SECTION++

SECTION 510 – RELOCATING OR MODIFYING EXISTING MISCELLANEOUS ITEMS

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

510.04 – Measurement and Payment – Add the following to the end of the first paragraph:

Remove Existing Sign Panel and Post: Remove Existing Sign Panel and Post will be measured in units of EACH (EA) complete assembly removed and disposed. The unit price shall include all labor, tools, materials and equipment, and shall be full compensation for proper removal and disposal of existing sign panel, post, anchor sleeve, post base, and existing post foundation assembly. The unit price shall also include restoration of disturbed area to match existing grade, surface cover, and surrounding conditions.

SECTION 512 – MAINTAINING TRAFFIC

The work specified in this section consists of maintaining traffic within the limits of the project for the duration of the construction period, including any temporary suspensions of the work and shall conform to VDOT Road and Bridge Specifications Sections 2007, the 2011 version of the Virginia Work Area Protection Manual, and the 2009 MUTCD with the following additions.

512.03 – Procedures

(a) Signs – add the following:

Fluorescent prismatic lens sheeting (Diamond Grade) shall be used on all orange construction and maintenance activity signs, barrier delineators, guardrail delineators and barrier vertical panels installed in the public right-of-way.

Add the following after 512.03 (q):

(r) Maintenance of Traffic Plan

The Contractor shall present his Maintenance of Traffic Plan at the pre-construction conference. The Maintenance of Traffic Plan shall be in written form and include a minimum of four (4) full size sets of plan sheets which indicate the type and location of all signs, lights, barricades, pavement striping and barriers to be used for the safe passage of pedestrians and vehicular traffic through the project and for the protection of the workers. The Plan shall indicate conditions and setups for each phase of the Contractor's activities. The Plan shall also include and identify any temporary pavement, detour plans, and construction phase sequencing for activities that will disrupt the normal flow and operations of traffic. Design of such plans is the sole responsibility of the Contractor.

When the project plans include or specify a specific Maintenance of Traffic Plan, alternate proposals will be considered by the Engineer when they are found to be equal to or better than the plan specified. The Contractor shall be responsible for all work zone signing, delineation, pavement markings, and any other traffic control devices necessary to perform the work in accordance with these specifications or as directed by the Engineer. The Contractor shall erect, maintain, secure and move all traffic control devices in the project limits and any detour signs needed for the project. Upon completion of the work, the Contractor shall immediately remove all such temporary traffic control devices.

In no cases will the Contractor begin work until the Maintenance of Traffic Plan has been approved in writing by the Engineer. Modifications to the Maintenance of Traffic Plan shall also be approved in writing. Except in an emergency, no changes to the approved plan will be allowed until approval to change such plan has been received from the Engineer.

The Contractor shall be responsible for performing daily inspections, including weekends and holidays, with inspections at night, of the installations. The project personnel will be advised

of the schedule of these inspections and be given the opportunity to join in the inspection as is deemed necessary.

The Contractor will not be permitted to store material used for construction or erection of traffic control signs or signals on the pavement or shoulder if the street is open to public traffic. All materials shall be stored in such a manner that they will not be on the ground or come in contact with surface runoff (e.g., on pallets).

(s) Number of Traffic Lanes

Except as otherwise specified herein, on the plans, or in the special provisions, the Contractor shall maintain one lane of traffic in each direction. Two lanes of traffic in each direction shall be maintained where necessary to avoid undue traffic congestion. Unless otherwise specified, the effective width of each lane used for maintenance of traffic shall be at least as wide as the traffic lanes existing in the area prior to commencement of construction. Traffic control and warning devices shall not encroach on lanes used for maintenance of traffic.

The Contractor may be allowed to restrict traffic to one-way operation with written permission from the Engineer for short periods of time provided that adequate means of traffic control are in effect, certified flaggers are available and traffic is not unreasonably delayed.

The Contractor shall observe and obey all local and State laws, ordinances, regulations and permits in relation to the obstruction of streets and highways, keeping passageways open and detecting traffic. All roadway pavement cuts and sawcuts must be made between the hours of 9:00 a.m. and 3:00 p.m. All lanes shall be kept open to traffic at all other times. If steel plates are required or directed by the Engineer, they shall be provided by the Contractor. By special review the Contractor, at this request, may work from 6:30 p.m. to 5:00 a.m. in non-residential areas.

(u) Scheduling of Work

Highway lighting and traffic signals shall not be placed in operation, including flashing operation, prior to commencement of the functional test period (minimum of 48 hours) unless ordered otherwise by the Engineer.

Conductors shall not be pulled into conduit until pull boxes are set to grade, crushed rock slumps installed, mortar placed around conduit, concrete bottom of pull boxes placed, and metallic conduit bonded.

(v) Serving Utility Companies

The Contractor shall be responsible for all negotiations with and between the utility companies. The Contractor shall assume all charges and make all necessary arrangements with the power company. The Contractor shall comply with the utility company regulations.

512.04 – Measurement and Payment

Add the following:

Temporary Suspension of Work: Temporary Suspension of Work shall not be measured and paid for separately; it shall be considered incidental to other pay items.

Maintaining Traffic: Maintaining Traffic will be measured and paid as a single LUMP SUM (LS) item. The unit price shall include flagger service, police officer, construction signs, portable changeable message signs, electronic arrows, channelizing devices, pavement markings, temporary traffic control signal(s), truck mounted attenuators, temporary pavement design and construction, and all other required labor, tools, materials, equipment, and personnel necessary to provide proper maintenance of traffic as described in Section 512 and as directed by the Engineer. No separate measurement or payment will be made for any additional items not explicitly listed above required to provide proper maintenance of traffic.

++ END OF SECTION ++

SECTION 513 – MOBILIZATION

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

513.02 – Measurement and Payment

Replace Section 513.02 – Measurement and Payment with the following:

Mobilization and demobilization shall not be measured and paid for separately; it shall be considered incidental to other pay items. Coordination with Dominion Virginia Power (DVP), Verizon, Cox Communication, Virginia Natural Gas, Level 3 and the City of Norfolk, or any other entities required to fully execute the Contract Documents shall also be considered incidental to other pay items and shall not be measured and paid for separately.

++END OF SECTION++

SECTION 601 – SELECTIVE TREE REMOVAL, TRIMMING, AND CLEANUP

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

601.04 – Measurement and Payment

Replace Section 601.04– Measurement and Payment with the following:

Selective Tree Removal will be measured in units of LUMP SUM (LS). The unit price shall include all labor, tools, materials and equipment, and shall be full compensation for proper removal and disposal existing trees and stumps in order to complete the proposed work depicted on the plans.

++END OF SECTION++

SECTION 602 – TOPSOIL

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

609.01 – Description is amended as follows:

The placement of grass planting shall include all top soil, seed, lime, and fertilizer as shown on the plans.

609.02 – Materials is amended as follows:

(c) Seed, lime and fertilizer shall be per VDOT Road and Bridge Specification Section 603 – SEEDING.

609.03 – Procedures is amended as follows:

(d) Seed, lime and fertilizer shall be per VDOT Road and Bridge Specification Section 603 – SEEDING.

602.04 – Measurement and Payment

Replace Section 602.04– Measurement and Payment with the following:

Grass Planting will be measured in and paid for at the contract unit price per CUBIC YARD (CY). This price shall include soil testing and provision of test reports; preparing areas to receive topsoil; furnishing, loading, transporting, and applying topsoil/seed/lime/fertilizer; finishing areas; and restoring damaged areas.

++END OF SECTION++

SECTION 609 – TREE WELLS AND TREE WALLS

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

609.01 – Description is amended as follows:

In addition, this work shall consist of installing tree root barrier adjacent to sidewalks at the locations and depth shown on the plans. Deep tree root barrier shall be 12" in height made of polypropylene and be ISO 9002 certified.

609.04 – Measurement and Payment is amended as follows:

Tree Root Protection will be measured in units of LINEAR FEET (LF) based limits shown on the plans. The unit price shall include all labor, tools, materials and equipment, and shall be full compensation for furnishing and installing the tree root barrier.

++END OF SECTION++

SECTION 700 – GENERAL TRAFFIC CONTROL DEVICES

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

700.02 – Material – is amended as follows:

(i) 4. **Sign Post** – replace with the following:

- 1) Sign post shall be metal break-away 2 ½ - inch square tube post. The post shall be rolled or formed sections of the dimensions specified. All sharp corners shall be rounded and rough or burred parts shall be smoothly dressed.

The 2 ½ - inch square tube posts shall be 10 – gauge steel conforming to the ASTM A570, Grade 50 for steel post. Steel post shall be galvanized in accordance with AASHTO M-120, followed by a chromate conversion coating and a clear organic polymer topcoat. Both the interior and the exterior of the post shall be galvanized. Manufactured by Allied tube and Conduit, Inc. or approved equal.

Sign post design shall conform to the requirements of the AASHTO *Standard Specifications for Structural Supports for Highway Signs Luminaries, and Traffic Signals* (latest approved edition).

The hardware posts and anchors shall be designed and installed in compliance with the manufacturer's installation guidelines to the FHWA breakaway standards.

When specified on the plans, the post shall be powder coated black to match Federal Standard 595B Color Number 17038. The finish coating shall be a six stage chemical treatment for an electrostatic applied fusion bonded polyester powder coating. The polyester protective coating shall be one coat (minimum 4 mils dry film thickness or in accordance with manufacturer's specifications), and heat curable, thermosetting powered coating. The polyester coating shall be checked for continuity using 67- ½ volt wet sponge detector to check for holidays, pinholes and discontinuities. Coating shall be checked and certified.

- 2) The 2 ½-inch square tube posts shall have bolt hole that are pre-punched. The holes shall be 7/16-inch in diameter on 1-inch centers on all four sides down the entire length of the post. Field punched holes will not be permitted.
- 3) The length shall be as necessary for the type and location of installation. The ends of the post shall be tampered for easy installation.

Add the following after (l):

- (m) Anchor Base – Shall be 30-inch section of 12-gauge square tubing installed per manufacturer specifications for the post size specified on the plans including use of Corner Belt fasteners, manufactured by Allied Tube and Conduit, Inc. or approved equal.
- (n) Anchor Sleeve - Shall meet manufacturer specifications for stabilization anchor sleeve, manufactured by Allied Tube and Conduit, Inc., or approved equal.
- (o) Slip Base – Shall meet manufacturer specifications for slip base, manufactured by accessories Squared or approved equal.
- (p) Concrete Footing – Footing shall be concrete Class A3. Sign post footing size shall be minimum 1 feet wide by 2 feet deep.

700.05 – Measurement and Payment – replace the following:

Sign Posts – replace entire paragraph with the following:

Furnish and Install Sign Post: will be measured and paid for in units of EACH (EA) of sign post for the size and finish specified. This price shall include post, top cap and clamps, anchor sleeve, anchor base, slip base, powder coat black finish (when called for on the plans), concrete footing, as well as labor, tools, equipment, and incidentals necessary to complete the installation. This price does not include sign panel.

Add the following to the end:

Anchor Base:

Furnish and Install Anchor Base: will be considered incidental and will not be measured and paid for separately.

Anchor Sleeve:

Furnish and Install Anchor Sleeve: will be considered incidental and will not be measured and paid for separately.

Slip Base:

Furnish and Install Slip Base: will be considered incidental and will not be measured and paid for separately.

Concrete Footing:

Furnish and Install Concrete Footing: will be considered incidental and will not be measured and paid for separately.

++END OF SECTION++

SECTION 701 – TRAFFIC SIGNS

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

701.02 – Materials – Replace with the following:

Traffic Sign:

- 1) Sign Face- Face material shall conform to VDOT Section 247 (Reflective Sheeting) and be 3M™ Diamond Grade™ DG³ Reflective Sheeting Series 4000 material or equal for all signs.
- 2) Aluminum Blank- shall conform to VDOT Section 701.
- 3) Sign Backing – When specified on the plans, the back of the sign blank shall have colored sheeting applied. The pressure sensitive Black color sheet shall be #7725-12, manufactured by 3M™ Product or equal.
- 4) Ground Mounted Installation: shall conform to VDOT Std. SSP-VA and include the following materials:
 - a. Posts- shall conform to Section 700 of these specifications.
 - b. Anchor Sleeve- shall conform to Section 700 of these specifications.
 - c. Anchor Base- shall conform to Section 700 of these specifications.
 - d. Slip Base- shall conform to Section 700 of these specifications.
 - e. Concrete Flooring- shall conform to Section 700 of these specifications.
 - f. Banding Hardware- For banding applications, C – BRACKET shall utilize “SIGN FIX”, PART # BC12118UNC. Banding material shall be “BANDIT” – ¾” X 100 FT. ROLL – 0.030 STAINLESS STEEL, PART # C20699, with “BANDIT” EAR – LOKT...PART # C25699 or approved equal. When color post is required, all hardware shall be powder coated conforming to Section 700 of these specifications.
 - g. Universal Channel Clamp- MACM – 120 ALUMINUM 12FT SECTION MEDIUM EXTRUDED CHANNEL MFG. BY SIGN FIX UNIVERSAL CHANNEL CLAMP...PART # UCC0004 or approved equal. When color posts are required, all hardware shall be powder coated conforming to Section 700 of these specifications.
 - h. Bracing- Shall be 6061-T6 aluminum alloy and have 2-inch mounting surface x 7/8-inch depth x 1/8-inch nominal wall thickness, punched with 7/32-inch

diameter holes on 6-inch centers along centerline of 2-inch mounting surface. Sign cluster layout shall conform to MUTCD guidelines.

- i. Fastener- Drive rivets shall be utilized to fasten the signs to the post. Plastic nylon washer shall be placed between the sign face and rivet head.
- j. Sign & Sign Post Inventory ID Label Installation- A sign inventory identification label shall be provided by the City of the Contractor. The self-adhesive label shall be applied to the back of each sign and each post, and noted on the Daily Work Log (see Section 100 – General Requirements).

701.03 – Procedures – Add the following after (d):

- (e) Vertical distance between the bottom of the lowest sign on a sign post and the ground line is a minimum of 5 feet above non-traversable areas (e.g. median, gore area); otherwise, the minimum mounting height is 7 feet as measured to the lowest sign on a sign post.

701.04 – Measurement and Payment – Delete and replace with following:

Traffic Signs:

Furnish and Install Traffic Sign will be measured and paid for in units of SQUARE FEET (SF) of sign panel for the ground-mounted types specified on the plans. This price shall include fabrication of sign face, aluminum blank, colored sign backing (when called for in the plans), sign layout (if sign cluster), hardware, clamps, bracing, ID labels and fasteners, as well as all labor, tools, equipment and incidentals necessary to complete the installation. This price does not include sign post, anchor base, anchor sleeve, slip base or concrete footing. Sign cluster layout shall conform to MUTCD guidelines and sign cluster detail shall be submitted to the City of Norfolk for approval prior to installation.

++END OF SECTION++

SECTION 702 – DELINEATORS

VDOT Road and Bridge Specifications, 2007 Edition, shall be followed unless otherwise amended or supplemented with the specifications contained herein. Where conflicts occur, the specifications contained herein shall prevail.

702.01 – Description is amended as follows:

In addition, this work shall consist of furnishing and installing reflectorized sleeves over utility guy wires in the locations shown on the plans.

702.05 – Measurement and Payment is amended as follows:

Reflectorized Sleeves will be measured in units of EACH (EA) based on the quantity shown on the plans. The unit price shall include all labor, tools, materials and equipment, and shall be full compensation for furnishing and installing the reflectorized sleeves.

++END OF SECTION++



REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING SERVICES

Elizabeth River Trail

Norfolk, Virginia

G E T Project No: VB14-172G

August 18, 2014

PREPARED FOR:



Vanasse Hangen Brustlin, Inc.

August 18, 2014

TO: **Vanasse Hangen Brustlin, Inc.**

Two Columbus Center
4500 Main Street, Suite 400
Virginia Beach, VA 23462

Attn: Mr. Tyson N. Rosser, P.E.

RE: Report of Subsurface Exploration and Geotechnical Engineering Services

Elizabeth River Trail

Norfolk, Virginia

G E T Project No: VB14-172G

Dear Mr. Rosser:

In compliance with your instructions, we have completed our Subsurface Exploration and Geotechnical Engineering Services for the referenced project. The results of this study and our recommendations for geotechnical aspects of the project are presented in this report.

Often, because of design and construction details that occur on a project, questions arise concerning subsurface conditions. **G E T Solutions, Inc.** would be pleased to continue its role as Geotechnical Engineer during the project implementation.

Thank you for the opportunity to work with you on this project. We trust that the information contained herein meets your immediate needs. Should you have any questions or if we can be of further assistance, please do not hesitate to contact us.

Respectfully Submitted,

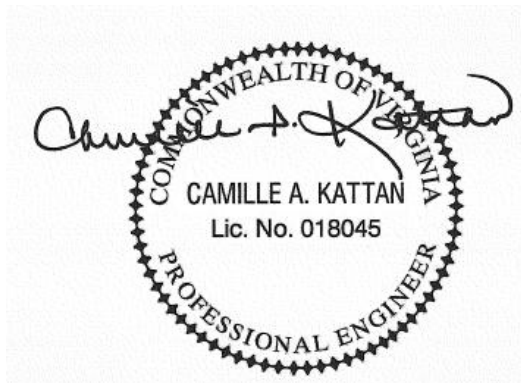
G E T Solutions, Inc.



Matthew R. English, E.I.T.
Project Engineer



Camille A. Kattan, P.E.
Principal Engineer
Virginia Lic No.: 018045



Copies: Client (1)

TABLE OF CONTENTS

EXECUTIVE SUMMARY	<i>i</i>
1.0 PROJECT INFORMATION	1
1.1 Project Authorization	1
1.2 Project Location and Site Description	1
1.3 Project Construction Description.....	2
1.4 Purpose and Scope of Services.....	3
2.0 FIELD AND LABORATORY PROCEDURES	4
2.1 Field Exploration.....	4
2.2 Laboratory Testing	4
3.0 SUBSURFACE CONDITIONS.....	5
3.1 Site Geology.....	5
3.2 Subsurface Soil Conditions.....	6
3.3 Groundwater Information	7
4.0 EVALUATION AND RECOMMENDATIONS.....	7
4.1 Claremont Avenue Recommendations (Area 1)	7
4.1.1 <i>Clearing and Grading</i>	7
4.1.2 <i>Subgrade Preparation</i>	8
4.1.3 <i>Pedestrian Path Design</i>	8
4.2 Pedestrian Bridge Recommendations (Area 3)	9
4.3 Structural Fill and Placement.....	9
4.4 Suitability of On-Site Soils	10
4.5 Shallow Foundation Recommendations (Pedestrian Bridge Abutments)	10
4.5.1 <i>Abutment Foundation Design Recommendations</i>	10
4.5.2 <i>Abutment Settlements</i>	11
4.5.3 <i>Abutment Foundation Excavations</i>	11
4.5.4 <i>Slope Stability and Protection at Abutments</i>	12
4.6 Deep Foundation Recommendations (Pedestrian Bridge Abutments)	12
4.6.1 <i>Timber Pile Design Recommendations</i>	13
4.6.2 <i>Adjacent Structures</i>	14
4.6.3 <i>Test Pile Program</i>	15
4.6.4 <i>Production Pile / Acceptance Criteria</i>	16
4.6.5 <i>Deep Foundation Settlements</i>	17
4.7 Estimated Lateral Earth Pressure Parameters	17
4.8 Seismic Site Class	18

TABLE OF CONTENTS (CONTINUED)

5.0	CONSTRUCTION CONSIDERATIONS	19
5.1	Drainage and Groundwater Concerns.....	19
5.2	Excavations.....	19
6.0	REPORT LIMITATIONS	20
APPENDIX I	- BORING LOCATION PLANS	
APPENDIX II	- SUMMARY OF SOIL CLASSIFICATION SYSTEM	
APPENDIX III	- BORING LOGS	
APPENDIX IV	- GENERALIZED SOIL PROFILE	
APPENDIX V	- SHELBY TUBE CLASSIFICATION	
APPENDIX VI	- CONSOLIDATION TEST RESULTS	
APPENDIX VII	- PRELIMINARY ABUTMENT DESIGN DETAILS	
APPENDIX VIII	- SLOPE STABILITY ANALYSIS	

EXECUTIVE SUMMARY

The project site consists of three (3) separate areas located within the City of Norfolk, Virginia. These areas are as follows:

1. The southern project site which is designated as Area 1 is located within the existing Claremont Avenue roadway alignment between its intersection with Hampton Boulevard and Azalea Court. Specifically, the Area 1 site is bordered by existing commercial structures and Hampton Boulevard to the east, by the existing Elizabeth River Trail recreational path and Blue Bird Park to the west, by Azalea Court to the south and to the north by Hampton Boulevard and a trail rail underpass. Existing site grades within Area 1 range from approximately +4.0 MSL to +10.0 MSL as indicated on a site plan provided by VHB, Inc. Area 1 is expected to consist of extending the existing Elizabeth River Trail pedestrian path to the Norfolk Southern rail underpass at Hampton Boulevard.
2. The northeast project site which is designated as Area 2 is located within the vicinity of the northwest corner of Hampton Boulevard and West 25th Street. Our scope of services did not include investigation or evaluation of Area 2. This area was not within the scope of this project.
3. The northwest project site which is designated as Area 3 is bordered by two (2) existing residential structures to the north, an existing commercial structure to the south, West 25th Street to the west and by Bowdens Ferry Road to the east. Existing site grades within the northwest project site range from approximately +1.0 and +10.0 feet MSL as indicated on a site plan provided by VHB, Inc. The proposed development at Area 3 is expected to consist of constructing a single span pedestrian bridge approximately 14 feet in width to cross an existing drainage ditch between West 25th Street and Bowdens Ferry Road. Multi-use pedestrian paths are also expected to be constructed at both ends of the bridge span to connect the roadway and/or future multi-use path alignments.

In order to explore the general subsurface soil types and to aid in developing associated geotechnical design parameters, a field exploration program was performed as depicted in the table below:

Boring No.	Depth (feet)	Project Area	General Location
B-1	10	1	Claremont Avenue, westbound lane, between Hampton Boulevard and Elizabeth River Trail (path) *Facilitated by a 6" core through existing concrete pavement
B-2	40	3	East side of existing drainage canal, west of intersection of Bowdens Ferry Road and West 25 th Street
B-3	30	3	West side of existing drainage canal, east of intersection of Bluestone Street and West 25 th Street

The results of our soil test borings are summarized in the table below:

AVERAGE DEPTH (feet)	STRATUM	DESCRIPTION	RANGES OF SPT ⁽¹⁾ N-VALUES
0 to 0.67	Pavement	8 inches of Concrete Pavement <i>*Encountered at the location of boring B-1.</i>	-
0 to 0.25 - 0.3	Topsoil	3 to 4 inches of Topsoil <i>*Encountered at the location of borings B-2 and B-3.</i>	-
0.25 - 0.67 to 2 - 4	FILL/Possible FILL	SAND (SM) with varying amounts of Clay, Silt, fine to medium Gravel, fibrous organics with brick and concrete fragments.	5 - 7
2 - 4 to 16.5	I	SAND (SM, SP-SM, SP) with varying amount of Clay and Silt. <i>*Boring B-1 was terminated within this stratum.</i>	3 - 13
16.5 to 30 - 40 (Boring Termination Depths)	II	CLAY (CH, CL) with varying amounts Silt and Sand.	WOH ⁽²⁾ - 2

Note (1) SPT = Standard Penetration Test, N-Values in Blows-per-foot (Uncorrected).

Note (2) WOH = Weight-of-Hammer

The groundwater level was observed at the boring locations as observed through the relative wetness of the recovered soil samples during the drilling operations. The initial groundwater table was observed to occur at depth of approximately 4 feet below existing grades (corresponding to an elevation of +5 feet MSL) at Area 1 and at a depth of approximately 6 feet below existing grades (corresponding to an elevation of +2 feet MSL) at Area 3. The boreholes were backfilled upon completion for safety considerations. As such, the reported groundwater level may not be indicative of the static groundwater level.

The following evaluations and recommendations were developed based on our field exploration and laboratory-testing program. Since design of the pedestrian bridge and foundation system are not finalized, the recommendations provided in this report should be considered preliminary in nature.

- A field testing program is recommended during construction. This testing program should include as a minimum, subgrade load testing (proofrolling) and compaction testing (for shallow foundations).

- The proposed new construction alignments should be cleared by means of removing the topsoil, root mat or any otherwise unsuitable materials (concrete path alignment of Areas 1 and 3 only).
- The proposed pedestrian path of Area 1 can be constructed with 6" of concrete underlain by 6" of aggregate base material (VDOT Type 21-A or 21-B) bearing upon a stable subgrade (compacted to a dry density of at least 95% of the Standard Proctor maximum dry density (ASTM D 698) and approved by the Geotechnical Engineer).
- The shallow subsurface Clayey and Silty SAND (SC-SM) soils encountered at the boring locations do not appear to meet the criteria recommended in this report for reuse as structural fill.
- Provided that the recommended earthwork construction procedures are properly performed, the proposed abutments for the pedestrian bridge can be supported by shallow foundations bearing upon firm natural soil or well compacted and suitable structural fill placed over firm, natural subgrades. **In-place uncontrolled FILL materials are not considered suitable for foundation support and must be removed from below all footings where encountered.** The footings for the pedestrian bridge abutments can be designed using a net allowable soil pressure of 2,000 pounds per square foot (psf) bearing on firm natural soil or well compacted structural fill. Toe pressures may be exceeded by 25%.
- In order to develop the recommended bearing capacities, the base of the footings for these abutments should have an embedment of at least 6 feet beneath existing grades (approximate elevation of 0 feet MSL). The recommended 6-foot embedment is considered sufficient to provide adequate cover safety factors for bearing capacity and global stability (adequate toe cover at slope face).
- It is estimated that, with proper site preparation, the maximum resulting post construction total settlement of the proposed abutments should be up to 1 to 1.5 inches. The maximum differential settlement magnitude is expected to be less than ½ -inch along the length of the footing.
- The results of the stability analyses indicate that fill slopes of 3:1 (H:V) have an acceptable safety factor (>1.5). Slopes of 3:1 are typically more easily maintained from an erosion and vegetation standpoint.
- It is recommended to provide 7.5- to 9-foot (footing width) horizontal clearance separating the outside of the footing closest to the slope and the face of the slope.
- The proposed pedestrian bridge abutments are recommended to be supported by means of round timber piles.
- The allowable capacity for the piles includes a safety factor of at least 2.0. The capacity of a group of piles spaced at least 3 pile diameters apart, center to center, can be taken as the sum of the individual capacities with no reduction factor.

- Pile design recommendations are provided in the following table:

EMBEDMENT ⁽¹⁾ (FT)	INSTALLATION METHOD	PILE TYPE & DIMENSIONS	ALLOWABLE CAPACITY IN COMPRESSION (TONS)	ALLOWABLE CAPACITY IN TENSION (TONS)	ALLOWABLE LATERAL CAPACITY (TONS)	PRE- AUGERING DEPTH (FT)
25	Impact Driving	8" Min. Dia. Tip Round Timber ⁽²⁾	10	3	1	0 – 3

Notes: (1) Embedment depth below existing site grades at the time of our site reconnaissance.

(2) Timber Pile: Minimum 12-inch diameter butt, minimum 8-inch diameter at tip.

- Based on the results of load tests performed on piles installed in similar soils conditions, the round pile butt settlements are not expected to exceed about ½-inch.
- When considering the suitability of a pile foundation, consideration should be given to the integrity of nearby structures.
- With regard to the design of the wing-walls to resist lateral earth pressures, estimated soil parameters are provided in this report. The design should consider the groundwater level to occur at surface grades.
- On the basis of the results of our soil test borings (the upper 40 feet of the recovered soils, maximum explored depth) and our experience with similar soil conditions in the project area, it is our opinion that this site should be classified as a Site Class "D" in accordance with Table 20.3-1 Site Classification of the ASCE 7-10 Minimum Design Loads for Buildings and Other Structures, Chapter 20 (referenced in the 2013 IBC).

This summary briefly discusses some of the major topics mentioned in the attached report. Accordingly, this report should be read in its entirety to thoroughly evaluate the contents.

After the plans and specifications are more complete the Geotechnical Engineer should be provided the opportunity to review the final design plans and specifications to assure our engineering recommendations have been properly incorporated into the design documents so that the earthwork and foundation recommendations can be properly interpreted and implemented. At that time, it may be necessary to submit supplementary recommendations.

1.0 PROJECT INFORMATION

1.1 Project Authorization

G E T Solutions, Inc. has completed our Subsurface Exploration and Geotechnical Engineering Services for the Elizabeth River Trail project located in Norfolk, Virginia. The geotechnical engineering services were conducted in general accordance with **G E T** Proposal No. PVB13-706G, dated December 12, 2013. Authorization to proceed with our services was received from the client in the form of a signed Master Agreement executed by Tyson N. Rosser of Vanasse Hangen Brustlin, Inc.

1.2 Project Location and Site Description

The project site consists of three (3) separate areas located within the City of Norfolk, Virginia. These areas are as follows:

1. The southern project site which is designated as Area 1 is located within the existing Claremont Avenue roadway alignment between its intersection with Hampton Boulevard and Azalea Court. Specifically, the Area 1 site is bordered by existing commercial structures and Hampton Boulevard to the east, by the existing Elizabeth River Trail recreational path and Blue Bird Park to the west, by Azalea Court to the south and to the north by Hampton Boulevard and a trail rail underpass. Existing site grades within Area 1 range from approximately +4.0 MSL to +10.0 MSL as indicated on a site plan provided by VHB, Inc.
2. The northeast project site which is designated as Area 2 is located within the vicinity of the northwest corner of Hampton Boulevard and West 25th Street. Our scope of services did not include investigation or evaluation of Area 2.
3. The northwest project site which is designated as Area 3, is bordered by two (2) existing residential structures to the north, an existing commercial structure to the south, West 25th Street to the west and by Bowdens Ferry Road to the east. Existing site grades within the northwest project site range from approximately +1.0 and +10.0 feet MSL as indicated on a site plan provided by VHB, Inc.

1.3 Project Construction Description

The proposed construction at Areas 1 through 3 is discussed below:

1. Area 1 is expected to consist of extending the existing Elizabeth River Trail pedestrian path to the Norfolk Southern rail underpass at Hampton Boulevard. Sections of the existing concrete pavement within the Claremont Avenue roadway alignment are expected to be demolished to facilitate the path extension. The new path extension is expected to be approximately 10 feet in width and consist of concrete pavement. Other various site improvements including curb and sidewalk modifications, new pavement marking and project signing are also expected at this project site. Finish site grades are expected to coincide with existing grades, cuts and fills are not expected to exceed 1 to 2 feet.
2. Not in project scope.
3. The proposed development at Area 3 is expected to consist of constructing a single span pedestrian bridge approximately 14 feet in width to cross an existing drainage ditch between West 25th Street and Bowdens Ferry Road. Multi-use pedestrian paths are also expected to be constructed at both ends of the bridge span to connect the roadway and/or future multi-use path alignments. The bridge structure is expected to be of structural steel design with timber decking and railings supported by concrete abutments on shallow foundations with a footprint of up to 16ft x 9ft in plan area. Alternatively, if the bridge is to be supported on deep foundations, the bridge structure is expected to be multiple spans and of all-timber construction. As reported by VHB, Inc. up to 2 feet of fill material will be required to establish design grades at the abutment locations. Three design alternatives possessing different span lengths, loading conditions, and foundation types currently exist and are detailed as follows:
 - a. 50-foot length, single-span bridge, with bridge abutments possessing contact pressure of 1,000 pounds per square foot (psf) and a toe pressure of 2,300 psf
 - b. 100-foot length, single-span bridge, with bridge abutments possessing contact pressure of 2,000 pounds per square foot (psf) and a toe pressure of 2,500 psf.
 - c. 100-foot length, multiple-span bridge, constructed all of timber on timber pile bents spaced 12' on center. Assuming 2 timber piles per bent, each timber pile would be loaded approximately 12,600 lbs.

If any of the noted information is incorrect or has changed, please inform **GET Solutions, Inc.** so that we may amend the recommendations presented in this report, if appropriate.

1.4 Purpose and Scope of Services

The purpose of this study was to obtain information on the general subsurface conditions at the project site. The subsurface conditions encountered were evaluated with respect to the available project characteristics. In this regard, engineering assessments for the following items were formulated:

1. General assessment of the existing subsurface soils revealed by the borings performed along the proposed new trail alignment.
2. General location and description of potentially deleterious material encountered in the borings that may interfere with construction progress, including existing fills or surficial/subsurface organic deposits.
3. Soil subgrade preparation, including stripping, grading, and compaction. Engineering criteria for placement and compaction of approved structural fill material.
4. Evaluation of the suitability of on-site soils for re-use as fill.
5. Feasibility of utilizing a shallow foundation system for support of the abutments of the proposed bridge. Design parameters required for the foundation systems, including foundation sizes, allowable bearing pressures, foundation levels, and expected total and differential settlements.
6. Feasibility of utilizing a deep foundation system comprised of timber piles for support of the proposed bridge structure and abutments, including pile design parameters, testing, and installation criteria.
7. Pedestrian path design based on the field exploration and our experience with similar soil conditions.

The scope of services did not include an environmental assessment for determining the presence or absence of wetlands or hazardous or toxic material in the soil, bedrock, surface water, groundwater or air, on or below or around this site. Prior to development of this site, an environmental assessment is advisable.

2.0 FIELD AND LABORATORY PROCEDURES

2.1 Field Exploration

In order to explore the general subsurface soil types and to aid in developing associated geotechnical design parameters, a field exploration program was performed as depicted below in Table I.

Table I-Soil Boring Schedule

Boring No.	Depth (feet)	Project Area	General Location
B-1	10	1	Claremont Avenue, westbound lane, between Hampton Boulevard and Elizabeth River Trail (path) *Facilitated by a 6" core through existing concrete pavement
B-2	40	3	East side of existing drainage canal, west of intersection of Bowdens Ferry Road and West 25 th Street
B-3	30	3	West side of existing drainage canal, east of intersection of Bluestone Street and West 25 th Street

The SPT borings were performed with the use of rotary wash "mud" drilling procedures in general accordance with ASTM D 1586. The tests were performed continuously from the existing ground surface to a depth of 10 and 12-feet, and at 3- and 5-foot intervals thereafter. The soil samples were obtained with a standard 1.4" I.D., 2" O.D., 30" long split-spoon sampler. The sampler was driven with blows of a 140 lb. hammer falling 30 inches, using an automatic hammer. The number of blows required to drive the sampler each 6-inch increment of penetration was recorded and is shown on the boring logs. The sum of the second and third penetration increments is termed the SPT N-value (uncorrected for automatic hammer and overburden pressure). A representative portion of each disturbed split-spoon sample was collected with each SPT, placed in a glass jar, sealed, labeled, and returned to our laboratory for review.

The boring locations were established by the client's representative, Mr. Tyson Rosser, P.E. with VHB, Inc. and staked in the field by a representative of **G E T Solutions, Inc.** The approximate boring locations are shown on the attached "Boring Location Plan" (Appendix I), which was provided by the client's representative.

2.2 Laboratory Testing

Representative portions of all soil samples collected during drilling were sealed in glass jars, labeled and transferred to our laboratory for classification and analysis. The soil classification was performed by a Geotechnical Engineer in accordance with ASTM D2488. A summary of the soil classification system is provided in Appendix II.

Six (6) representative soil samples were selected and subjected to laboratory testing, which included natural moisture, Atterberg limits, -#200 sieve wash testing and analysis, in order to corroborate the visual classification. These test results are tabulated below (Table II) and are also presented in the "Boring Log" sheets (Appendix III) and in the "Generalized Soil Profile" (Appendix IV).

Table II - Laboratory Test Results

Boring No.	Depth (Feet)	Natural Moisture (%)	Percent Passing #200	Atterberg Limits (LL/PL/PI)	USCS Classification
B-1	2-4	16.0	5.0	Non-Plastic	SP
B-2	3-5	18.0	19.0	Not Tested	SM
B-2	18-20	50.0	68.0	48/22/26	CL
B-2	38-40	72.0	97.0	68/23/39	CH
B-3	8-10	21.0	11.0	Not Tested	SP-SM
B-3	23-25	63.0	83.0	95/29/66	CH

One (1) one-dimensional consolidation test was performed on the specimen extracted from the Shelby tube sample obtained at boring location B-2 at our Virginia Beach laboratory in general accordance with ASTM D2435. More detailed information is provided in the "Shelby Tube Classification" presented in Appendix V. The soils in the Shelby tube collected from boring B-2 consisted of Lean CLAY with 78% of fines passing the No. 200 Sieve. The consolidation test results are presented in the table below (Table III) and the comprehensive test results are provided in Appendix VI.

Table III-Consolidation Test Results

Boring No.	Depth (Ft)	Natural Moisture (%)	Overburden (tsf)	P _c (tsf)	C _c	C _r	e _o
B-2	26-28	48.4	0.85	1.75	0.72	0.03	1.31

3.0 SUBSURFACE CONDITIONS

3.1 Site Geology

The project site lies within a major physiographic province called the Atlantic Coastal Plain. Numerous transgressions and regressions of the Atlantic Ocean have deposited marine, lagoonal, and fluvial (stream lain) sediments. The regional geology is very complex, and generally consists of interbedded layers of varying mixtures of sands, silts and clays. Based on our review of existing geologic and soil boring data, the geologic stratigraphy encountered in our subsurface explorations generally consisted of marine deposited sands, silts and clays.

3.2 Subsurface Soil Conditions

The results of our soil test borings are included in the table (Table IV) below:

Table IV - Subsurface Soil Conditions

AVERAGE DEPTH (feet)	STRATUM	DESCRIPTION	RANGES OF SPT ⁽¹⁾ N-VALUES
0 to 0.67	Pavement	8 inches of Concrete Pavement <i>*Encountered at the location of boring B-1.</i>	-
0 to 0.25 - 0.3	Topsoil	3 to 4 inches of Topsoil <i>*Encountered at the location of borings B-2 and B-3.</i>	-
0.25 - 0.67 to 2 - 4	FILL/Possible FILL	SAND (SM) with varying amounts of Clay, Silt, fine to medium Gravel, fibrous organics with brick and concrete fragments.	5 - 7
2 - 4 to 16.5	I	SAND (SM, SP-SM, SP) with varying amount of Clay and Silt. <i>*Boring B-1 was terminated within this stratum.</i>	3 - 13
16.5 to 30 - 40 (Boring Termination Depths)	II	CLAY (CH, CL) with varying amounts Silt and Sand.	WOH ⁽²⁾ - 2

Note (1) SPT = Standard Penetration Test, N-Values in Blows-per-foot (Uncorrected).

Note (2) WOH = Weight-of-Hammer

The subsurface description is of a generalized nature provided to highlight the major soil strata encountered. The records of the subsurface exploration are included on the "Boring Log" sheets (Appendix III) and in the "Generalized Soil Profile" (Appendix IV), which should be reviewed for specific information pertaining to the boring. The stratifications shown on the records of the subsurface exploration represent the conditions only at the actual boring locations. Variations may occur and should be expected across the site. The stratifications represent the approximate boundary between subsurface materials and the transition may be gradual or occur between sample intervals. It is noted that the topsoil designation references the presence of surficial organic laden soil, and does not represent any particular quality specification. It is recommended that this material be tested for approval prior to use.

3.3 Groundwater Information

The groundwater level was observed at the boring locations as observed through the relative wetness of the recovered soil samples during the drilling operations. The initial groundwater table was observed to occur at depth of approximately 4 feet below existing grades (corresponding to an elevation of +5 feet MSL) at Area 1 and at a depth of approximately 6 feet below existing grades (corresponding to an elevation of +2 feet MSL) at Area 3. The boreholes were backfilled upon completion for safety considerations. As such, the reported groundwater level may not be indicative of the static groundwater level.

As subsurface soils begin to dry moisture moves upwards through the soil profile by means of capillary action. Based on the subsurface soil composition (soils containing more than 30% of fines by weight), this initial groundwater reading (based on the relative wetness of the soils) could be in part attributed to the capillary action of the soils. As such, if the static groundwater elevation is critical to the design of the proposed structure it is recommended to install temporary groundwater monitoring wells to substantiate this initial reading.

Groundwater conditions will vary with environmental variations and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as man-made influences, such as existing swales, drainage ponds, underdrains and areas of covered soil (paved parking lots, sidewalks, etc.). Seasonal groundwater fluctuations of ± 2 feet are common in the project's area; however, greater fluctuations have been documented. We recommend that the contractor determine the actual groundwater levels at the time of the construction to determine groundwater impact on the construction procedures.

4.0 EVALUATION AND RECOMMENDATIONS

Our recommendations are based on the previously discussed project information, our interpretation of the soil test borings and laboratory data, and our observations during our site reconnaissance. If the proposed construction should vary from what was described, **GET Solutions, Inc.** requests the opportunity to review our recommendations and make any necessary changes.

4.1 Claremont Avenue Recommendations (Area 1)

4.1.1 Clearing and Grading

The proposed new Elizabeth River Trail alignments should be cleared by means of removing the topsoil, root mat or any otherwise unsuitable materials. The approximate depth of this cut is not known due to boring location B-1 being within Claremont Avenue and not within the footprint of the proposed path alignment. It is recommended that the clearing operations extend laterally at least 3 feet beyond the boundaries of the proposed construction alignment.

4.1.2 Subgrade Preparation

Following the clearing operation, the exposed subgrade soils should be densified with a large static drum roller. After the subgrade soils have been densified, they should be evaluated by **GET Solutions, Inc.** for stability. Accordingly, the subgrade soils should be proofrolled to check for pockets of loose material hidden beneath a crust of better soil. Several passes should be made by a large rubber-tired roller, loaded dump truck or other heavy equipment over the construction area. The number of passes will be determined in the field by the Geotechnical Engineer depending on the soils conditions. Any pumping and unstable areas observed during proofrolling (beyond the initial cut) should be undercut and/or stabilized at the directions of the Geotechnical Engineer.

As discussed in Section 3.2 of this report, Possible FILL material was encountered at the boring location in Area 1. Therefore, in addition to the proofroll, several 2- to 6-foot deep test pits should be excavated within the proposed pedestrian path's alignment. The test pits are considered necessary to determine the thickness and composition of the Possible FILL materials and thus the potential suitability for them to remain in-place beneath the pavement as well as substantiate the required cut depth to remove these Possible FILL materials within the pedestrian path area. The test pits should be performed under the observation of a representative of **GET Solutions, Inc.**, who will evaluate the composition of the recovered soils. It is likely that some subgrade improvements will be required to provide suitable soils for sidewalk support. Recommendations concerning the subgrade improvements (as necessary) will be provided in the field following the testing procedures. The project's budget should include an allowance for subgrade improvements (undercut and backfill with structural fill).

4.1.3 Pedestrian Path Design

It is recommended that the new constructed pedestrian path be designed as follows in Table V:

Table V-Sidewalk Section Thickness

Street	Sidewalk
Pavement Type	Rigid
Concrete (in.) ⁽¹⁾	6.0
Aggregate Base (in.) ⁽²⁾	6.0
Subgrade ⁽³⁾	Stable

Notes:

(1) Concrete minimal flexural strength of 650 psi at 28 days.

(2) VDOT Type 21-A or 21-B, compacted to a dry density of at least 95% of the Standard Proctor maximum dry density (ASTM D 698).

(3) Compacted to a dry density of at least 95% of the Standard Proctor maximum dry density (ASTM D 698) and approved by the Geotechnical Engineer.

Actual concrete section thickness for the new construction areas should be provided by the design civil engineer based on loads, volume, and the owners design life requirements.

4.2 Pedestrian Bridge Recommendations (Area 3)

For clearing and grading and subgrade preparation recommendations for the pavement areas in Area 3, please reference sections 4.1.1 and 4.1.2 of this report.

4.3 Structural Fill and Placement

Following the approval of the natural subgrade soils by the Geotechnical Engineer, the placement of the fill required to establish the design grades may begin. Any material to be used for structural fill should be evaluated and tested by **GET Solutions, Inc.** prior to placement to determine if they are suitable for the intended use. Suitable structural fill material should consist of sand or gravel containing less than 25% by weight of fines (SP, SM, SW, GP, GW), having a liquid limit less than 20 and plastic limit less than 6, and should be free of rubble, organics, clay, debris and other unsuitable material.

All structural fill should be compacted to a dry density of at least 98 percent of the Standard Proctor maximum dry density (ASTM D698). In general, the compaction should be accomplished by placing the fill in maximum 10-inch loose lifts and mechanically compacting each lift to at least the specified minimum dry density. A representative of **GET Solutions, Inc.** should perform field density tests on each lift as necessary to assure that adequate compaction is achieved.

Backfill material in utility trenches within the construction areas should consist of structural fill (as previously described above), and should be compacted to at least 98 percent of ASTM D698. This fill should be placed in 4 to 6 inch loose lifts when hand compaction equipment is used.

Care should be used when operating the compactors near existing structures to avoid transmission of the vibrations that could cause settlement damage or disturb occupants. In this regard, it is recommended that the vibratory roller remain at least 25 feet away from existing structures; these areas should be compacted with small, hand-operated compaction equipment.

4.4 Suitability of On-Site Soils

The shallow subsurface Clayey and Silty SAND (SC-SM) soils encountered at the boring locations do not appear to meet the criteria recommended in this report for reuse as structural fill. These materials appear to contain an excessive amount of fines (more than 25%) and do not appear suitable for use as structural fill. However, the cleaner shallow subsurface SAND (SP-SM, SP) soils with fewer fines may meet the criteria recommended in this report for reuse as structural fill. Significant moisture manipulation of these soils is expected as they are located near or below the groundwater table. This manipulation will likely require stockpiling of wet soils and/or placing the material in thin layers, which could prove time consuming and cost prohibitive. It is important that during excavation deposits of SAND (SC-SM with more than 25% fines) are segregated from the suitable granular soils (SP-SM, SP with less than 25% fines). Further classification testing (natural moisture content, gradation analysis, and Proctor testing) should be performed in the field during construction to evaluate the suitability of excavated soils for reuse as structural fill.

4.5 Shallow Foundation Recommendations (Pedestrian Bridge Abutments)

There are two proposed designs that encompass the use of shallow foundations for the support of the pedestrian bridge abutments. As previously mentioned, they are as follows:

- 50-foot length, single-span bridge, with bridge abutment foundations possessing contact pressure of 1,000 pounds per square foot (psf) and a toe pressure of 1,500 psf
- 100-foot length, single-span bridge, with bridge abutment foundations possessing contact pressure of 2,000 pounds per square foot (psf) and a toe pressure of 2,500 psf.

These designs will consist of concrete abutments which can be supported on shallow foundations. The abutments for the pedestrian bridge will consist of reinforced concrete structures with 7.5 or 9-foot wide foundations and span the width of the bridge (approximately 16 feet). Preliminary abutment design details for both cases above are provided in Appendix VII.

4.5.1 Abutment Foundation Design Recommendations

Provided that the recommended earthwork construction procedures are properly performed, the proposed abutments for the pedestrian bridge can be supported by shallow foundations bearing upon firm natural soil or well compacted and suitable structural fill placed over firm, natural subgrades. **In-place uncontrolled FILL materials are not considered suitable for foundation support and must be removed from below all footings where encountered.** The footings for the pedestrian bridge abutments can be designed using a net allowable soil pressure of 2,000 pounds per square foot (psf) bearing on firm natural soil or well compacted structural fill. The maximum toe pressure may be increased by 25%. In using net pressures, the weight of the footings and balanced backfill over the footings, need not be considered.

In order to develop the recommended bearing capacities, the base of the footings for these abutments should have an embedment of at least 6 feet beneath existing grades (approximate elevation of 0 feet MSL). The recommended 6-foot embedment is considered sufficient to provide adequate cover safety factors for bearing capacity and global stability (adequate toe cover at slope face).

4.5.2 Abutment Settlements

It is estimated that, with proper site preparation, the maximum resulting post construction total settlement of the proposed abutments should be up to 1 to 1.5 inches. The maximum differential settlement magnitude is expected to be less than ½ -inch along the length of the footing. The settlements were estimated on the basis of our field exploration program and soil consolidation testing. Consolidation test results are provided in Appendix VI. Careful field control will contribute substantially towards minimizing the settlements.

4.5.3 Abutment Foundation Excavations

In preparation for shallow foundation support, the footing excavations for the proposed abutments should extend into firm natural soil or well-compacted structural fill. Again, in-place FILL/Possible Fill materials are not considered suitable for foundation support and must be removed from below all footings. The foundation bearing capacities should be verified in the field during construction by means of performing an inspection of all abutment and retaining wall footings. At that time, the Geotechnical Engineer will explore the extent of excessively loose, soft, or otherwise unsuitable material within the exposed excavations. Also, at the time of the footing observations, the Geotechnical Engineer should perform hand auger borings or use a hand penetration device in the bases of the foundation excavations. The necessary depth of penetration will be established during the subgrade observations.

It is expected that the footing excavations will extend beneath the groundwater table level. Accordingly, the footings should be supported directly over at least 18 inches of VDOT #57 stone. Also, groundwater control procedures should be implemented to facilitate footing construction. Where foundation undercut is performed, the design footing elevation should be re-established by backfilling with flowable fill or VDOT No. 57 Stone placed in 6-inch lifts and compacted. Immediately prior to foundation concrete placement, it is suggested that the bearing surfaces of all foundations be compacted using hand operated mechanical tampers. In this manner, any localized areas, which have been loosened by excavation operations, should be adequately re-compacted. The compaction testing in the base of the foundation may be waived by the Geotechnical Engineer where firm bearing soils are observed during the foundation inspections.

Soils exposed in the bases of all satisfactory foundation excavations should be protected against any detrimental change in condition such as from physical disturbance, rain or frost. Surface run-off water should be drained away from the foundation excavations and slab areas and not be allowed to pond. If possible, all footing concrete should be placed the same day the excavation is made. If this is not possible, the footing excavations should be adequately protected.

4.5.4 Slope Stability and Protection at Abutments

Slope stability analysis of the embankment fills at the abutments for the pedestrian bridge was conducted. Circular potential failure surfaces were evaluated using the Modified Bishop method of analysis. The soil parameters used were estimated from the SPT borings and associated laboratory test data of the existing soils and from our experience with typical fill materials for other roadway and trail projects. The results of the stability analyses indicate that fill slopes of 3:1 (H:V) have an acceptable safety factor (>1.5). Slopes of 3:1 are typically more easily maintained from an erosion and vegetation standpoint. A summary of the analysis is provided in Appendix VIII.

In addition to maintaining a minimum 3:1 slope along the embankments, and as previously stated, the abutment foundations will require horizontal soil coverage in order to maintain the allowable bearing capacity. It is recommended to provide 7.5- to 9-foot (footing width) horizontal clearance separating the outside of the footing closest to the slope and the face of the slope. In addition, proper slope and toe protection should be provided along these slopes to prevent soil erosion and potentially undermining the abutment foundations. This may require installing rip rap at the toe of the slopes to protect against scour and erosion. Rip rap material and its installation should be completed in accordance with the guidelines established in Section 414 of the VDOT Road and Bridge Specifications and in accordance with recommendations provided by the design engineer.

Since the final design of the bridges and their abutments is not complete and approved for construction at this time, **G E T Solutions, Inc.** will need to evaluate the final design to ensure our recommendations in regards to the slopes and soil protection provided above are implemented and remain valid.

4.6 Deep Foundation Recommendations (Pedestrian Bridge Abutments)

The proposed pedestrian bridge abutments are recommended to be supported by means of round timber piles. It is recommended that the timber piles meet the requirements of ASTM D-25 for round timber tip bearing piles. The piles should be clean peeled and pressure treated in accordance with the requirements of AWPA C3. The timber pile design stresses should be established in accordance with ASTM D-2899 and the local applicable Building Codes. Additionally, we recommend the timber piles be treated with CCA (copper chrome arsenate) due to the location of the proposed structure in a temperate zone coastal environment.

Prior to pile installation, it is recommended that the timber piles be relatively free of defects and have a water content greater than approximately 20 percent (to minimize “breaking”) and less than about 50 percent (to minimize “brooming”).

Timber piles will derive their long-term capacity from shaft friction and end bearing via embedment within the granular soils encountered at this site to the design embedment depth.

4.6.1 Timber Pile Design Recommendations

We conducted static capacity analyses on the timber piles (tapered with minimum butt diameter of 12 inches and minimum tip diameter of 8 inches) using equations for shaft friction and end bearing that incorporated our experience and that of published information on displacement piles driven. The allowable capacity for the piles includes a safety factor of at least 2.0. The capacity of a group of piles spaced at least 3 pile diameters apart, center to center, can be taken as the sum of the individual capacities with no reduction factor. If closer pile spacing is anticipated, the Geotechnical Engineer should be contacted to evaluate the efficiency of the specific pile group. The final order lengths and tip elevations will be adjusted based on the results of the test piles and load test program.

The recommended pile embedment depth is required to achieve the allowable capacities. Any reduction in the length of embedment will correspond to a reduction in the allowable design capacities, unless otherwise directed by the geotechnical engineer after the test pile program. We recommend pre-augering the pile locations prior to driving to the depth shown in Table IV on the following page. This is necessary to help in minimizing the effects of vibrations from the driving effort on adjacent buildings and to reduce the potential for pile breakage.

In order to minimize driving difficulties due to densification of the soils and the reduction in capacity due to group action of the piles, it is recommended that the piles be driven with a center-to-center spacing of at least 3 feet. Also, soil densification should be expected to occur when driving piles in close groups, resulting in hard driving or refusal before reaching the desired pile tip penetration. If this occurs, pile acceptance will have to be evaluated by the Geotechnical Engineer.

The piles should be advanced by driving with an impact hammer to their design embedment depth. The pile driving hammer should have a minimum rated energy on the order of 10,000 to 15,000 foot-pounds per blow. If for some reason during construction, pile driving “refusal” is encountered before piles reach their design embedment depth, the Geotechnical Engineer should be retained to review driving records and field reports before assuming the pile can adequately support the design capacity. If the contractor’s hammer is insufficiently sized or is not operating properly, it may reach a “false” practical refusal before reaching the desired embedment depth.

Table VI- Pile Design Recommendations

EMBEDMENT⁽¹⁾ (FT)	INSTALLATION METHOD	PILE TYPE & DIMENSIONS	ALLOWABLE CAPACITY IN COMPRESSION (TONS)	ALLOWABLE CAPACITY IN TENSION (TONS)	ALLOWABLE LATERAL CAPACITY (TONS)	PRE- AUGERING DEPTH (FT)
25	Impact Driving	8" Min. Dia. Tip Round Timber ⁽²⁾	10	3	1	0 – 3

Notes: (1) Embedment depth below existing site grades at the time of our site reconnaissance.

(2) Timber Pile: Minimum 12-inch diameter butt, minimum 8-inch diameter at tip.

We recommend pre-augering the pile locations prior to driving to the depth shown in the table (Table VI). This is necessary to help in minimizing the effects of vibrations from the driving effort on adjacent buildings and to reduce the potential for pile breakage. Following the pre-augering, the piles should be installed and advanced by driving with an impact hammer to their design tip elevations. If for some reason during construction, pile driving "capacity" is encountered before the piles reach their design tip elevations, the Geotechnical Engineer should be retained to review driving records and field reports to determine whether the pile can adequately support the design loads. If the pile driving hammer is not properly matched to the pile type, size and subsurface conditions, it may reach practical refusal before the pile reaches the design tip elevation, or the required capacity.

4.6.2 Adjacent Structures

When considering the suitability of a pile foundation, consideration should be given to the integrity of nearby structures. Due to the large amount of energy required to install timber piles, vibrations of considerable magnitude are generated. These vibrations may affect nearby structures. These structures can, due to their proximity, be detrimentally affected by the construction unless proper protection measures are taken. In addition, experience has shown that these construction features will often lead adjacent property owners to conclude that damage to their property has taken place, even though none has occurred. These structures could include any type of structure that is nearby where vibrations could be damaging such as residential structures, garages, barns, culverts, utilities, bridges, roadways, etc. It is therefore recommended that a thorough survey of the adjacent properties be made prior to starting construction. This will help to better evaluate real claims and refute groundless nuisance claims.

The survey should include, but not be limited to, the following:

1. Visually inspecting adjacent structures, noting and measuring all cracks and other signs of distress. Take photographs as needed.
2. Visually inspecting adjacent pavements, noting and measure any significant cracks, depressions, etc. Take photographs as needed.

3. Establishing several benchmarks along foundation walls on adjacent structures. Both vertical and horizontal control should be employed.
4. Determining if equipment in any adjacent building is sensitive to vibration, and if so, establish proper control and monitoring system.

4.6.3 Test Pile Program

We recommend that a test pile program be implemented for the purpose of assisting in the development of final embedment depths and to confirm that the contractor's equipment and installation methods are acceptable. The test program should involve test or "indicator" piles to provide an indication of various driving or installation conditions. We recommend at least three (3) indicator piles. It is important to note the relationship between the required testing and our design assumptions. We chose safety factors based upon the recommended pile testing program. We expect that the pile testing program will include primarily a comparison of dynamic resistances and the results of the Wave Equation Analysis Program (WEAP). The geotechnical Engineer should monitor the driving of these test piles. The Geotechnical Engineer will require all of the test piles to be re-tapped following a waiting period of at least 72 hours to check for pile/soil setup.

The test pile locations should be selected by the Geotechnical Engineer. The piles should be driven using the drive system submitted by the contractor and approved by the Geotechnical Engineer. Test pile lengths should be 5 feet longer than the estimated design length to ensure that the required capacity is developed, to allow for refinement of estimated capacities. The indicator piles installed during the Test Pile Program, which satisfy the Geotechnical Engineer's requirements for proper installation, may also be used as permanent project piles.

The contractor should include in his equipment submittal a Wave Equation Analysis (using GRLWEAPTM software) modeling the behavior of the test piles during driving, or what is termed by GRL as a "Drivability Study." The primary intent of the Wave Equation Analysis is to estimate the feasibility of the contractor's proposed pile driving system with respect to installing the piles. Since the results of the Wave Equation Analyses are dependent on the chosen hammer, the pile type and length, and the subsurface conditions, it is likely that at least one Wave Equation Analysis per hammer will be required.

Pile driving equipment should not be mobilized for the test piles until the Wave Equation Analyses have been submitted and approved by the Geotechnical Engineer. If the contractor's proposed pile driving system is rejected, subsequent submittals of alternative drive systems should also include appropriate Wave Equation Analyses that are subject to the approval of the Geotechnical Engineer. The Wave Equation Analyses are also used to estimate:

- Compressive and tensile stresses experienced by the modeled pile during driving
- The total number of blows required to install the pile

- Driving resistance (in terms of blows per foot) within the various soil strata the pile is embedded in
- Driving time

The results of the WEAP analyses are highly dependent on the many input parameters related to the soil conditions, static pile capacity estimates, as well as specific characteristics associated with different makes and models of pile driving hammers.

4.6.4 Production Pile / Acceptance Criteria

Prior to driving production piles, the Geotechnical Engineer should establish the criteria for pile installation. The criteria will be based on the data collected during monitoring of the test pile installations, subsequent re-striking and WEAP results. The intent of establishing driving criteria is to facilitate installation of the production piles without damage and to provide a means of establishing when piles have achieved the design capacities. The driving criteria may include: hammer type, hammer energy, ram weight, pile cushion and thickness, hammer cushion type and thickness, required tip elevations and driving resistance necessary to achieve capacities, and possibly pre-drilling recommendations (if the test pile results warrant the need).

Utilizing the driving records for the tested piles and the results of the Wave Equation Analysis Program (WEAP), the results of these analyses may require some adjustment to the design capacity or depth.

The piles should be installed to the embedment depths identified on Table II or as refined by the Geotechnical Engineer following the test pile program. These piles should be driven to the dynamic driving resistance as determined in the field by the Geotechnical Engineer, or to practical refusal, whichever comes first.

Based on our experience with timber pile installation, it is essential that driving be terminated immediately if refusal is reached (i.e. 6 blows-per-inch or 72 blows-per-foot) to prevent damage to the piles.

The installation of all deep foundation systems should be in accordance with the local Building Code requirements. In addition, a qualified Geotechnical Engineer or representative should monitor the installation of all piles. General pile installation guidelines are provided below.

1. The piles should be evaluated and designed for the axial stresses by the project Structural Engineer. All of the piles in a foundation element should be of the same type and of equal load carrying capacity.

2. The pile-driving hammer should be capable of driving the pile to at least 3 times the design load without over-stressing the pile in tension or compression. At all times, the hammer should be operated at the chamber pressure, speed, etc. as recommended by the manufacturer.
3. Pile driving should be as continuous an operation as possible and should proceed without stopping over the last 3 feet of penetration. During pile installation, the contractor should exercise caution as not to over stress the piles. Piles shall not be driven beyond practical refusal as defined previously in this report.
4. The contractor should exercise caution in pile driving so that the effects of heave are minimized. Careful monitoring by the contractor for possible heave during driving should be exercised. All piles that heave $\frac{1}{4}$ inch or more should be re-driven unless otherwise instructed by the Geotechnical Engineer.
5. Piles should be installed under continuous monitoring by a qualified Senior Engineering Technician or Geotechnical Engineer in order to make field judgments of pile penetration and construction and to check for satisfactory foundation support conditions. Driven piles should be monitored for penetration resistance, blow counts, during pile driving and hammer action.

4.6.5 Deep Foundation Settlements

Based on the results of load tests performed on piles installed in similar soils conditions, the round pile butt settlements are not expected to exceed about $\frac{1}{2}$ -inch, which is the settlement necessary to mobilize the soil/pile capacity.

4.7 Estimated Lateral Earth Pressure Parameters

In order to reduce the magnitude of lateral loads being applied to the wing walls and to promote positive water drainage, it is recommended that a granular backfill be placed directly behind the wing walls and extend laterally back from the walls a minimum distance of five feet. These granular soils should be a relatively clean, free draining granular material (sand) classified as SP-SM or better, containing less than 12 percent passing the No. 200 sieve (0.074 mm). Water accumulated in these soils should be drained either by sumps or gravity flow using sock drains; otherwise, the walls should be sized with considerations given to the hydrostatic pressures occurring at elevation +5 MSL (seasonal high water table). The compaction of the select backfill soils behind the walls should be 95 percent of the Standard Proctor maximum dry density (ASTM D698). The soils in this zone should not be over-compacted. In order to minimize the potential for wall damage due to excessive compaction, hand operated mechanical tampers should be used to compact the granular materials. Heavy compaction equipment should not be allowed within five feet of the retaining walls.

With regard to the design of the wing-walls to resist lateral earth pressures, the estimated soil parameters are presented in Table VII on the following page. The design should consider the groundwater level to occur at surface grades.

Table VII-Estimated Lateral Earth Parameters

Soil Type	Structural Fill (+10 to +8 feet MSL)	SAND (SP, SP-SM, SM) (+8 to - 8.5 feet MSL)	CLAY (CH, CL) (-8.5 to -32 feet MSL)
Stratum	-	I	II
Average SPT N-value	-	5	0
Estimated Moist Unit Weight (pcf)	120	120	90
Estimated Saturated Unit Weight (pcf)	130	130	100
Estimated Bouyant Unit Weight (pcf)	68	68	38
Friction Angle (ϕ) (degrees)	30	30	5
Cohesion (C) (pcf)	0	0	150
Active Coefficient of Lateral Earth Pressure, K_a	0.33	0.33	0.84
At-rest Coefficient of Lateral Earth Pressure, K_o	0.50	0.50	0.91
Passive Coefficient of Lateral Earth Pressure, K_p	3.00	3.00	1.19

Note: (*) Neglect upper 2 feet.

4.8 Seismic Site Class

On the basis of the results of our soil test borings (the upper 40 feet of the recovered soils, maximum explored depth) and our experience with similar soil conditions in the project area, it is our opinion that this site should be classified as a Site Class "D" in accordance with Table 20.3-1 Site Classification of the ASCE 7-10 Minimum Design Loads for Buildings and Other Structures, Chapter 20 (referenced in the 2013 IBC). Typically, the seismic evaluation requires soils information associated with the upper 100 feet. If the site classification is critical to the structural design it will be necessary to perform a 100-foot deep CPT boring (or to refusal) with shear wave velocity testing to substantiate the site classification.

5.0 CONSTRUCTION CONSIDERATIONS

5.1 Drainage and Groundwater Concerns

It is expected that dewatering may be required for excavations that extend near or below the groundwater table. Dewatering above the groundwater level could probably be accomplished by pumping from sumps. Dewatering at depths below the groundwater level will require well pointing and possibly shoring.

It would be advantageous to construct all fills early in the construction. If this is not accomplished, disturbance of the existing site drainage could result in collection of surface water in some areas, thus rendering these areas wet and very loose. Temporary drainage ditches should be employed by the contractor to accentuate drainage during construction. We recommend that the contractor determine the actual groundwater levels at the time of construction to determine groundwater impact on this project.

5.2 Excavations

In Federal Register, Volume 54, No. 209 (October, 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to better insure the safety of workmen entering trenches or excavations. It is mandated by this federal regulation that all excavations, whether they be utility trenches, basement excavation or footing excavations, be constructed in accordance with the new (OSHA) guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the Design-Builder could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

We are providing this information solely as a service to our client. **GET Solutions, Inc.** is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

6.0 REPORT LIMITATIONS

The recommendations submitted are based on the available soil information obtained by **GET Solutions, Inc.** and the information supplied by the client and its consultants for the proposed project. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, **GET Solutions, Inc.** should be notified immediately to determine if changes in the foundation recommendations are required. If **GET Solutions, Inc.** is not retained to perform these functions, **GET Solutions, Inc.** can not be responsible for the impact of those conditions on the geotechnical recommendations for the project.

The Geotechnical Engineer warrants that the findings, recommendations, specifications or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

After the plans and specifications are more complete the Geotechnical Engineer should be provided the opportunity to review the final design plans and specifications to assure our engineering recommendations have been properly incorporated into the design documents so that the earthwork and foundation recommendations can be properly interpreted and implemented. At that time, it may be necessary to submit supplementary recommendations. This report has been prepared for the exclusive use of VHB, Inc. and their designated agents for the specific application to the Elizabeth River Trail project located in Norfolk, Virginia.

APPENDICES

- I. BORING LOCATION PLANS
- II. CLASSIFICATION SYSTEM FOR SOIL EXPLORATION
- III. BORING LOGS
- IV. GENERALIZED SOIL PROFILE
- V. SHELBY TUBE CLASSIFICATION
- VI. CONSOLIDATION TEST RESULTS
- VII. PRELIMINARY ABUTMENT DESIGN DETAILS
- VIII. SLOPE STABILITY ANALYSIS

APPENDIX I

BORING LOCATION PLANS

Boring Location Plan
Elizabeth River Trail
GET Project No. VB14-172G
Norfolk, Virginia
Client" Kimley-Horn & Associates
6/9/14



APPENDIX II

CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

Standard Penetration Test (SPT), N-value

Standard Penetration Tests (SPT) were performed in the field in general accordance with ASTM D 1586. The soil samples were obtained with a standard 1.4" I.D., 2" O.D., 30" long split-spoon sampler. The sampler was driven with blows of a 140 lb. hammer falling 30 inches. The number of blows required to drive the sampler each 6-inch increment (4 increments for each soil sample) of penetration was recorded and is shown on the boring logs. The sum of the second and third penetration increments is termed the SPT N-value.

NON COHESIVE SOILS

(SILT, SAND, GRAVEL and Combinations)

Relative Density

Very Loose	4 blows/ft. or less
Loose	5 to 10 blows/ft.
Medium Dense	11 to 30 blows/ft.
Dense	31 to 50 blows/ft.
Very Dense	51 blows/ft. or more

Particle Size Identification

Boulders	8 inch diameter or more
Cobbles	3 to 8 inch diameter
Gravel	Coarse 1 to 3 inch diameter
	Medium 1/2 to 1 inch diameter
	Fine 1/4 to 1/2 inch diameter
Sand	Coarse 2.00 mm to 1/4 inch (diameter of pencil lead)
	Medium 0.42 to 2.00 mm (diameter of broom straw)
	Fine 0.074 to 0.42 mm (diameter of human hair)
Silt	0.002 to 0.074 mm (cannot see particles)

COHESIVE SOILS

(CLAY, SILT and Combinations)

Consistency

Very Soft	2 blows/ft. or less
Soft	3 to 4 blows/ft.
Medium Stiff	5 to 8 blows/ft.
Stiff	9 to 15 blows/ft.
Very Stiff	16 to 30 blows/ft.
Hard	31 blows/ft. or more

Relative Proportions

<u>Descriptive Term</u>	<u>Percent</u>
Trace	0-5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Strata Changes

In the column "Description" on the boring log, the horizontal lines represent approximate strata changes.

Groundwater Readings

Groundwater conditions will vary with environmental variations and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as tidal influences and man-made influences, such as existing swales, drainage ponds, underdrains and areas of covered soil (paved parking lots, side walks, etc.).

CLASSIFICATION SYMBOLS (ASTM D 2487 and D 2488)

Coarse Grained Soils

More than 50% retained on No. 200 sieve

GW - Well-graded Gravel
GP - Poorly graded Gravel
GW-GM - Well-graded Gravel w/Silt
GW-GC - Well-graded Gravel w/Clay
GP-GM - Poorly graded Gravel w/Silt
GP-GC - Poorly graded Gravel w/Clay
GM - Silty Gravel
GC - Clayey Gravel
GC-GM - Silty, Clayey Gravel
SW - Well-graded Sand
SP - Poorly graded Sand
SW-SM - Well-graded Sand w/Silt
SW-SC - Well-graded Sand w/Clay
SP-SM - Poorly graded Sand w/Silt
SP-SC - Poorly graded Sand w/Clay
SM - Silty Sand
SC - Clayey Sand
SC-SM - Silty, Clayey Sand

Fine-Grained Soils

50% or more passes the No. 200 sieve

CL - Lean Clay
CL-ML - Silty Clay
ML - Silt
OL - Organic Clay/Silt
 Liquid Limit 50% or greater
CH - Fat Clay
MH - Elastic Silt
OH - Organic Clay/Silt

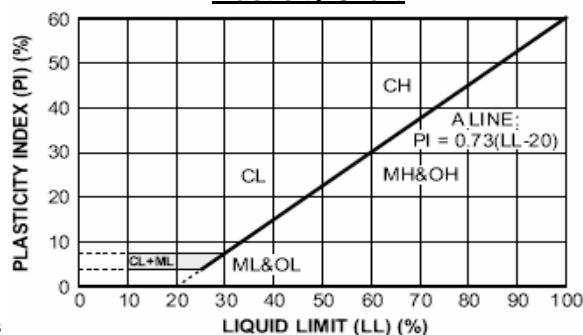
Highly Organic Soils

PT - Peat

Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent	GW, GP, SW, SP
More than 12 percent	GM, GC, SM, SC
5 to 12 percent	Borderline cases requiring dual symbols

Plasticity Chart



APPENDIX III
BORING LOGS



RECORD OF SUBSURFACE EXPLORATION

Virginia Beach
204 Grayson Road
Virginia Beach, VA 23642
757-518-1703

Williamsburg
1592-E Penniman Road
Williamsburg, VA 23185
757-564-6452




Elizabeth City
106 Capital Trace Unit E
Elizabeth City, NC 27909
252-335-9765

Jacksonville
415-A Western Blvd
Jacksonville, NC 28546
910-478-9915

BORING ID
B-1

PROJECT NAME: Elizabeth River Trail
CLIENT: Kimley Horn and Associates, Inc.
PROJECT LOCATION: Norfolk, Virginia
BORING LOCATION: See attached boring location plan
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER*: INITIAL (ft) ▽: 4 AFTER _____ HOURS (ft) ▼: _____ CAVE-IN (ft) ○: _____
The initial groundwater readings are not intended to indicate the static groundwater level.

PROJECT NUMBER: VB14-172G
SURFACE ELEVATION (MSL) (ft): 9
LOGGED BY: D. Ferko
DATE STARTED: 5/6/2014
DATE COMPLETED: 5/6/2014
DRILLER: GET Solutions, Inc.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	% \leq #200	TEST RESULTS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
									Plastic Limit \times — \times Liquid Limit																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
									Water Content - \bullet																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
										Penetration - 																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
										10 20 30 40 50 60 70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
5 	0.7	8" Concrete Pavement																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

Sample Type(s):

SS - Split Spoon

Notes:

This information pertains only to this boring and should not be interpreted as being indicative of the site.



RECORD OF SUBSURFACE EXPLORATION

Virginia Beach
204 Grayson Road
Virginia Beach, VA 23642
757-518-1703

Williamsburg
1592-E Penniman Road
Williamsburg, VA 23185
757-564-6452

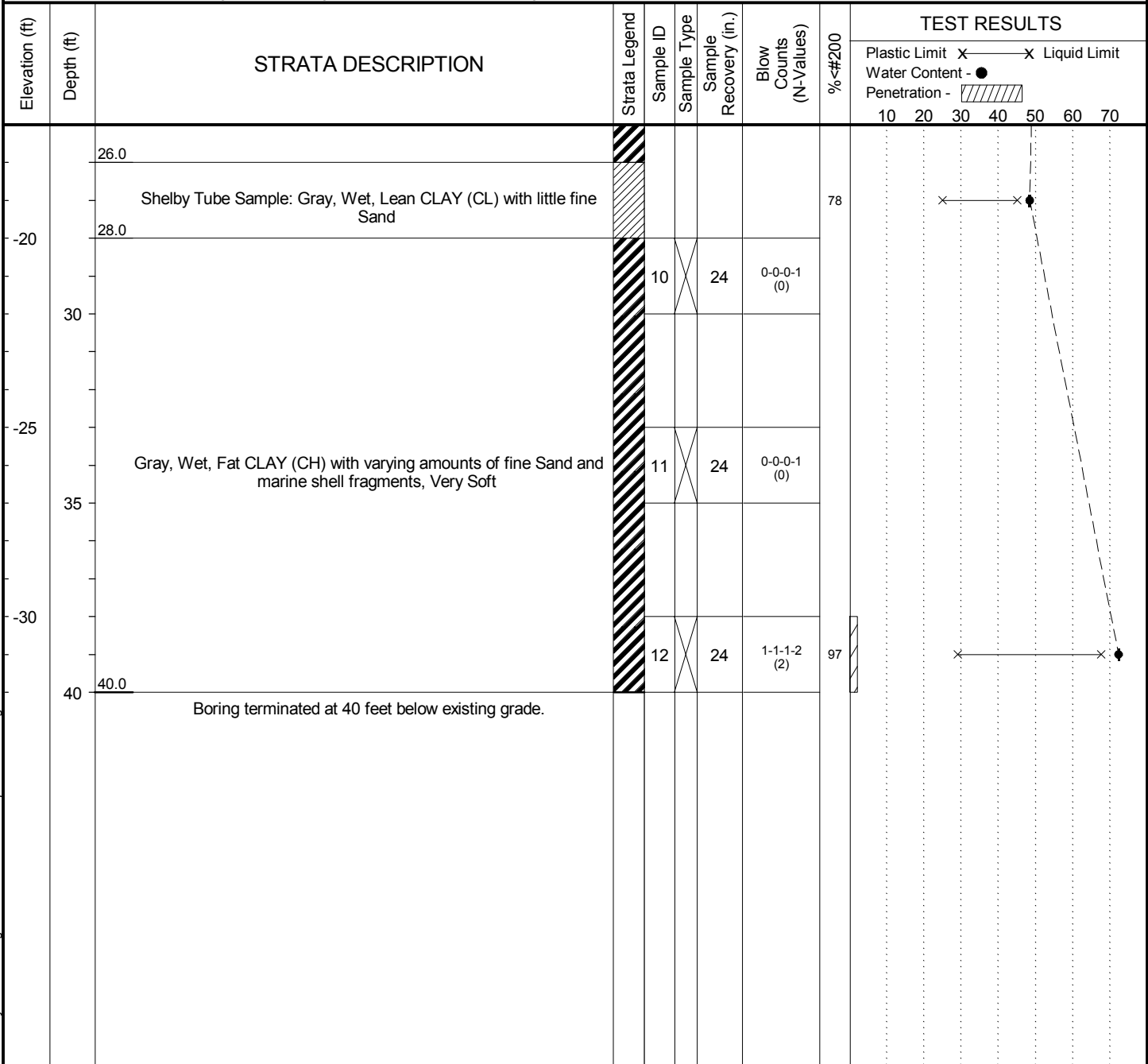
Elizabeth City
106 Capital Trace Unit E
Elizabeth City, NC 27909
252-335-9765

Jacksonville
415-A Western Blvd
Jacksonville, NC 28546
910-478-9915

BORING ID B-2

PROJECT NAME: Elizabeth River Trail
CLIENT: Kimley Horn and Associates, Inc.
PROJECT LOCATION: Norfolk, Virginia
BORING LOCATION: See attached boring location plan
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER*: INITIAL (ft) ∇ : 6 AFTER _____ HOURS (ft) ∇ : _____ CAVE-IN (ft) \odot : _____
The initial groundwater readings are not intended to indicate the static groundwater level.

PROJECT NUMBER: VB14-172G
SURFACE ELEVATION (MSL) (ft): 8
LOGGED BY: D. Ferko
DATE STARTED: 5/6/2014
DATE COMPLETED: 5/6/2014
DRILLER: GET Solutions, Inc.



Sample Type(s):

SS - Split Spoon

Notes:



RECORD OF SUBSURFACE EXPLORATION

Virginia Beach
204 Grayson Road
Virginia Beach, VA 23642
757-518-1703

Williamsburg
1592-E Penniman Road
Williamsburg, VA 23185
757-564-6452

Elizabeth City
106 Capital Trace Unit E
Elizabeth City, NC 27909
252-335-9765

Jacksonville
415-A Western Blvd
Jacksonville, NC 28546
910-478-9915

BORING ID B-3

PROJECT NAME: Elizabeth River Trail
CLIENT: Kimley Horn and Associates, Inc.
PROJECT LOCATION: Norfolk, Virginia
BORING LOCATION: See attached boring location plan
DRILLING METHOD(S): Rotary wash "mud"
GROUNDWATER*: INITIAL (ft) ▽: 6 AFTER _____ HOURS (ft) ▼: _____ CAVE-IN (ft) Ⓢ: _____
The initial groundwater readings are not intended to indicate the static groundwater level.

PROJECT NUMBER: VB14-172G
SURFACE ELEVATION (MSL) (ft): 8
LOGGED BY: D. Ferko
DATE STARTED: 5/6/2014
DATE COMPLETED: 5/6/2014
DRILLER: GET Solutions, Inc.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	% <#200	TEST RESULTS									
									Plastic Limit	X	—	X	Liquid Limit	Water Content	●	Penetration	/	/
									10	20	30	40	50	60	70			
-20		Gray, Wet, Fat CLAY (CH) with trace fine Sand and marine shell fragments, Very Soft <i>(layer continued from previous page)</i>		10	X	24	0-0-0-0 (0)											
30	30.0	Boring terminated at 30 feet below existing grade.																

Sample Type(s):

SS - Split Spoon

Notes:

This information pertains only to this boring and should not be interpreted as being indicative of the site.

APPENDIX IV

GENERALIZED SOIL PROFILE



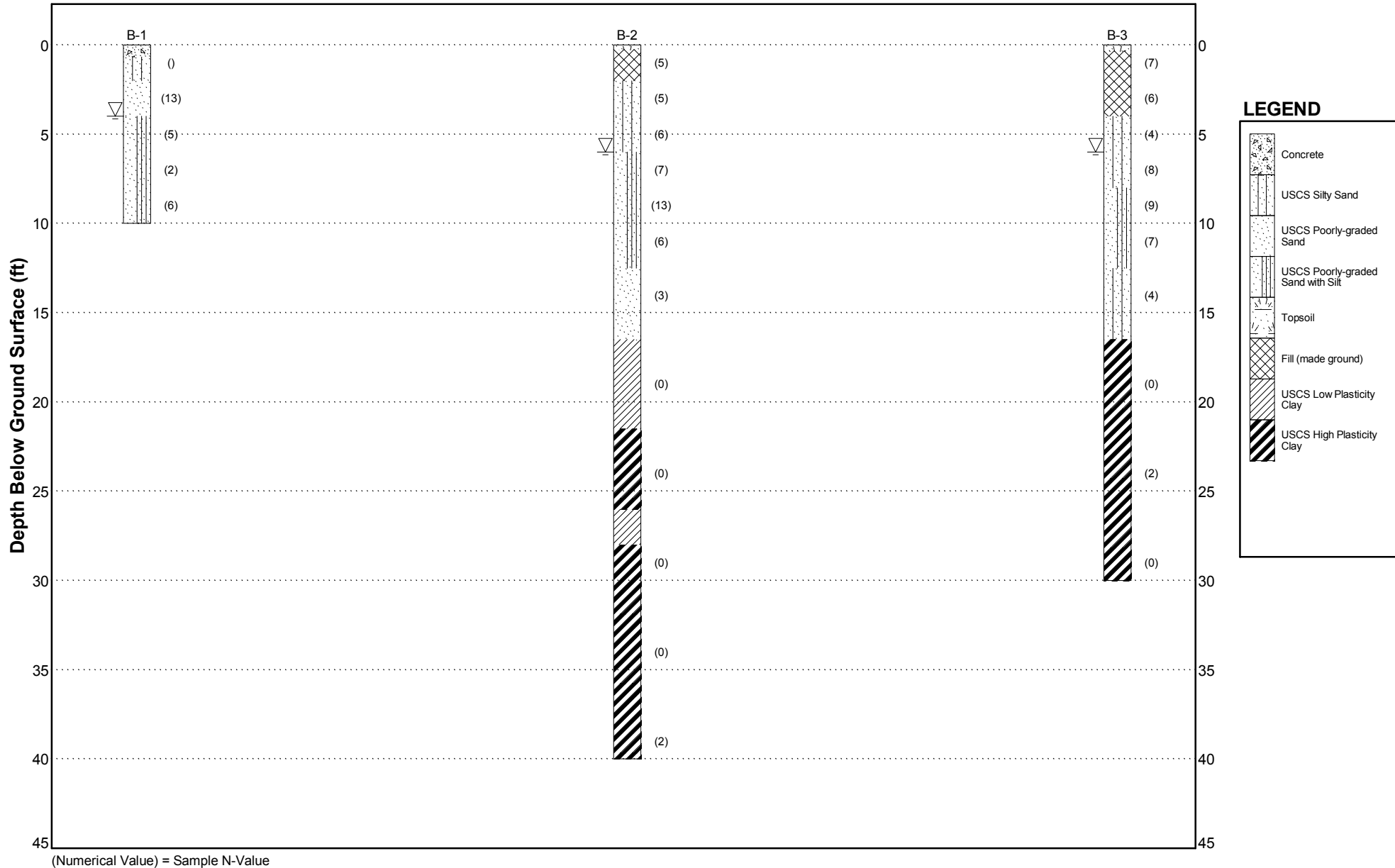
GENERALIZED SOIL PROFILE

PROJECT NAME: Elizabeth River Trail

PROJECT NUMBER: VB14-172G


PROJECT LOCATION: Norfolk, Virginia

CLIENT: Kimley Horn and Associates, Inc.



APPENDIX V

SHELBY TUBE CLASSIFICATION

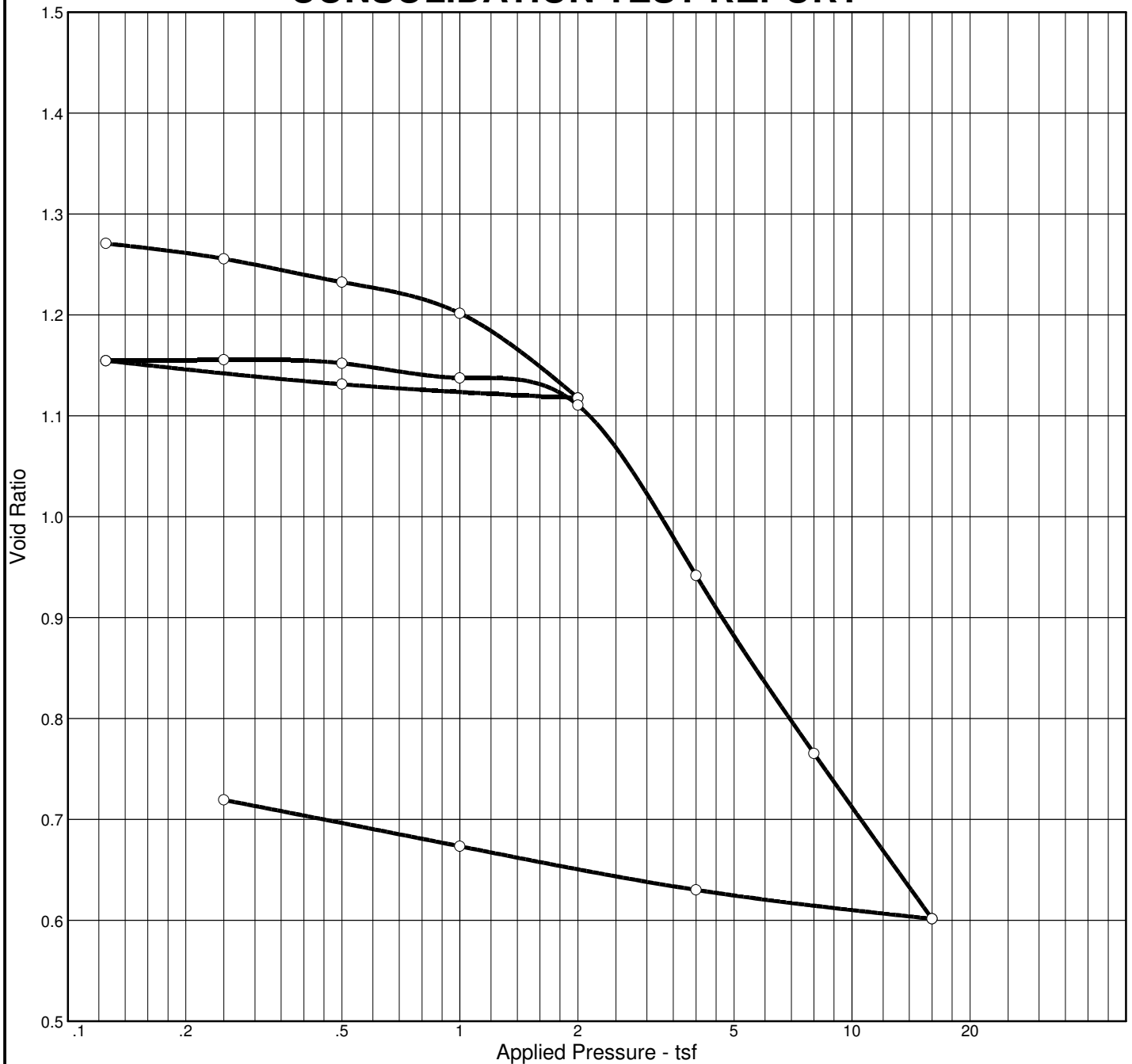
Project:	Elizabeth River Trail	Location:	Norfolk, VA
Job No:	VB14-172G	Client:	Vanasse Hangen Brustlin, Inc.
Inspector:		Date Sampled:	5/6/2014
Boring:	B-2		
		Depth below Grade (ft.)	26-28
Length (in.)	Depth below Grade (ft.)	Description:	
27	26-28	Gray, wet, Lean CLAY (CL) with little Sand, very soft	
		Picture:	
			

Natural Moisture	-#200 Sieve	Atterberg Limits
(%)	(%)	LL/PL/PI
48.4	78	45/25/20

APPENDIX VI

CONSOLIDATION TEST RESULTS

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P _c (tsf)	C _c	C _r	Initial Void Ratio
Saturation	Moisture									
99.7 %	48.4 %	70.2	45	20	2.7	0.85	1.75	0.72	0.03	1.310

MATERIAL DESCRIPTION								USCS	AASHTO
Gray, Lean CLAY with Sand								CL	A-7-6(16)

Project No. VB14-172G **Client:** Kimley-Horn & Associates

Project: Elizabeth River Trail

Location: B-2 (26-28 ft.)

Remarks:

Sample Obtained 5/6/14
Passing #200 Sieve = 78%

CONSOLIDATION TEST REPORT

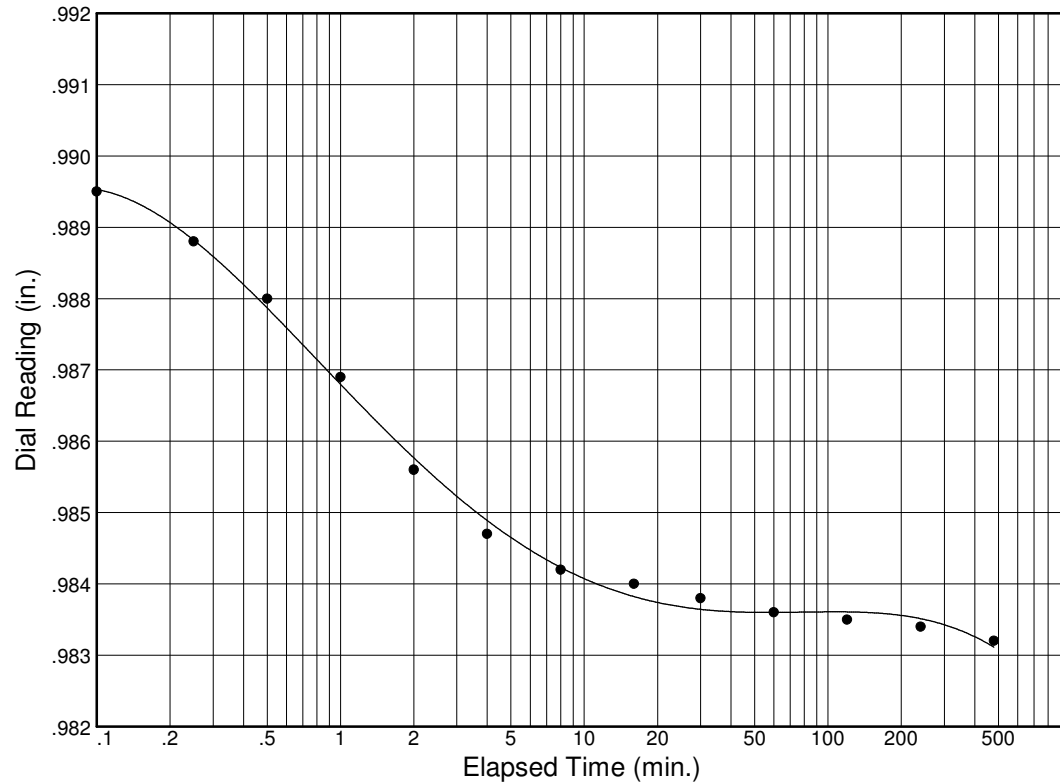
GET SOLUTIONS, INC.

Figure

Dial Reading vs. Time

Project No.: VB14-172G
Project: Elizabeth River Trail

Location: B-2 (26-28 ft.)



Load No.= 1

Load= 0.13 tsf

$D_0 = 0.99086$

$D_{50} = 0.98737$

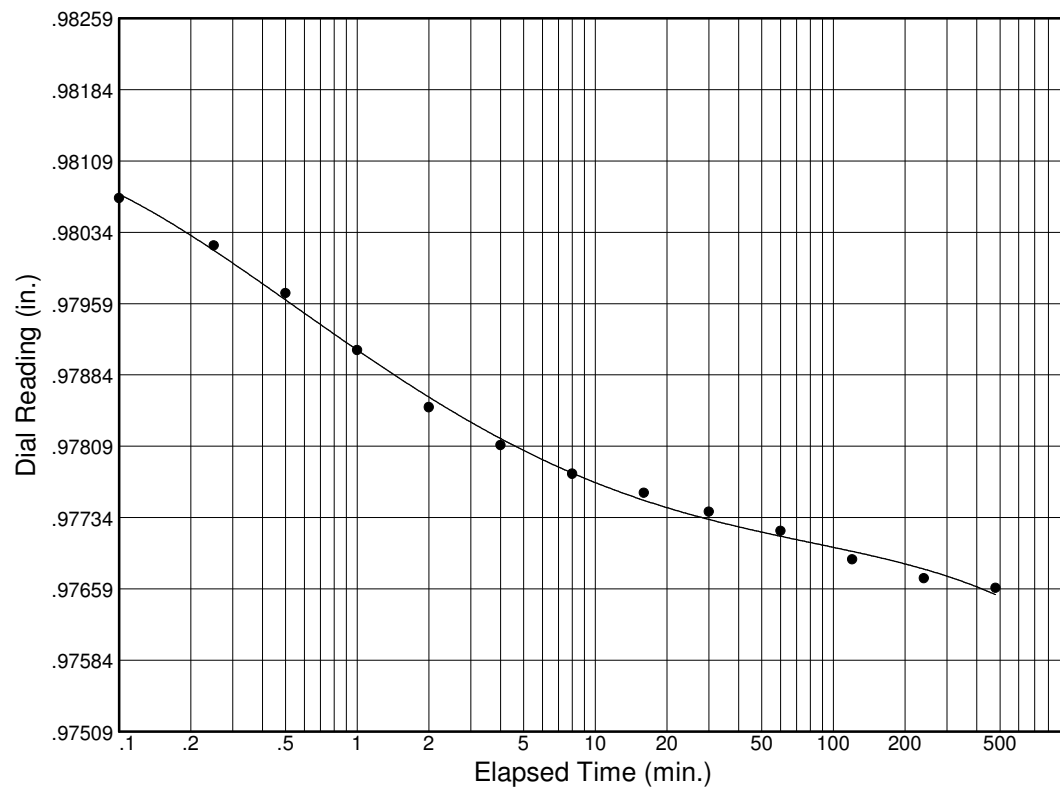
$D_{100} = 0.98388$

$T_{50} = 0.69 \text{ min.}$

$C_v @ T_{50}$

0.70 ft.²/day

$C_\alpha = 0.000$



Load No.= 2

Load= 0.25 tsf

$D_0 = 0.98320$

$D_{50} = 0.98036$

$D_{100} = 0.97752$

$T_{50} = 0.19 \text{ min.}$

$C_v @ T_{50}$

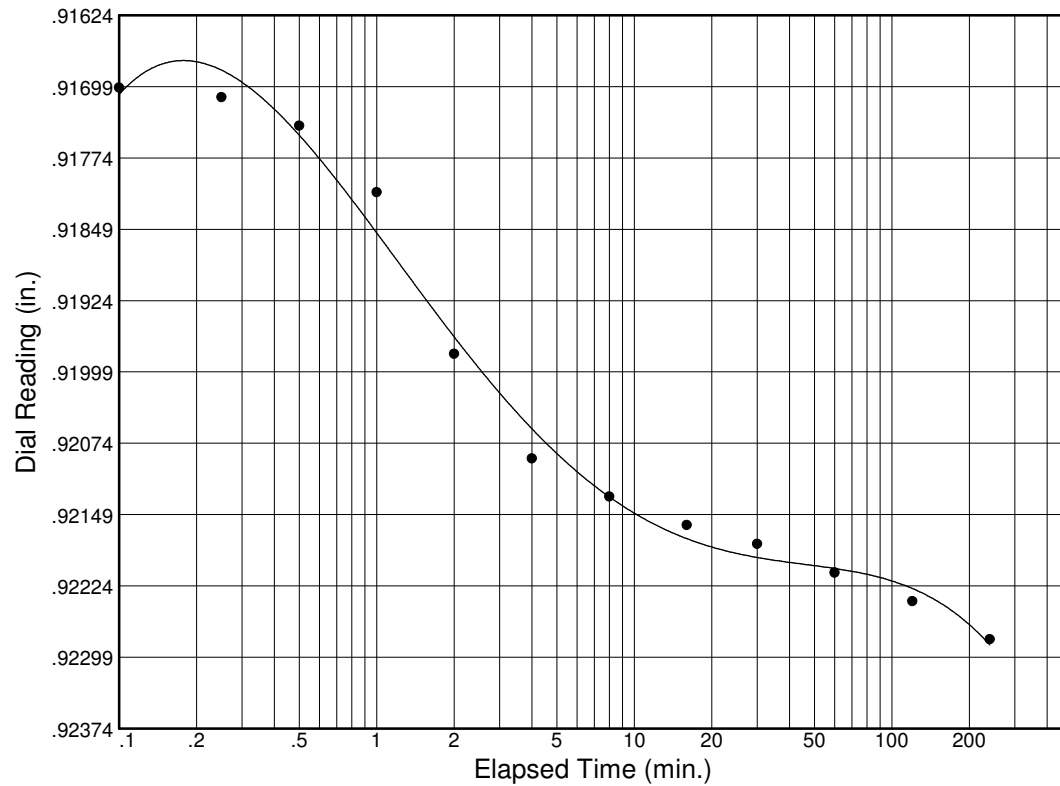
2.56 ft.²/day

$C_\alpha = 0.000$

Dial Reading vs. Time

Project No.: VB14-172G
Project: Elizabeth River Trail

Location: B-2 (26-28 ft.)



Load No.= 6

Load= 0.50 tsf

$D_0 = 0.91516$

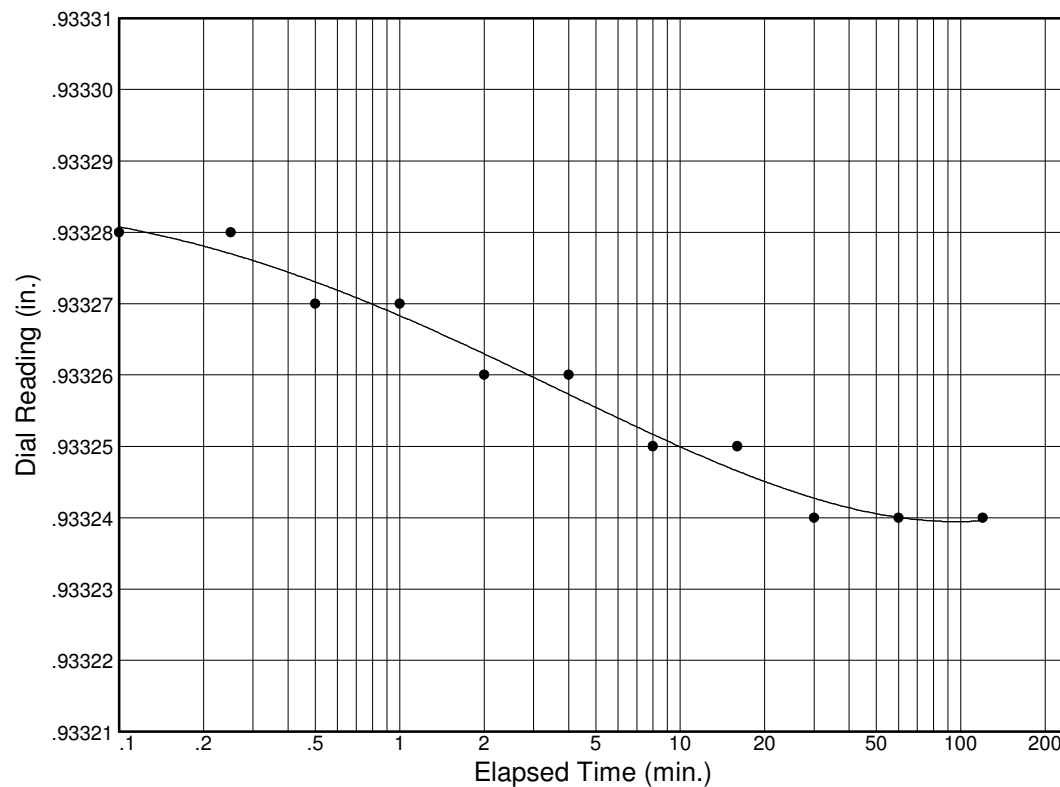
$D_{50} = 0.91847$

$D_{100} = 0.92179$

$T_{50} = 0.97 \text{ min.}$

$C_v @ T_{50}$

0.43 ft.²/day



Load No.= 8

Load= 0.25 tsf

$D_0 = 0.93329$

$D_{50} = 0.93326$

$D_{100} = 0.93324$

$T_{50} = 1.86 \text{ min.}$

$C_v @ T_{50}$

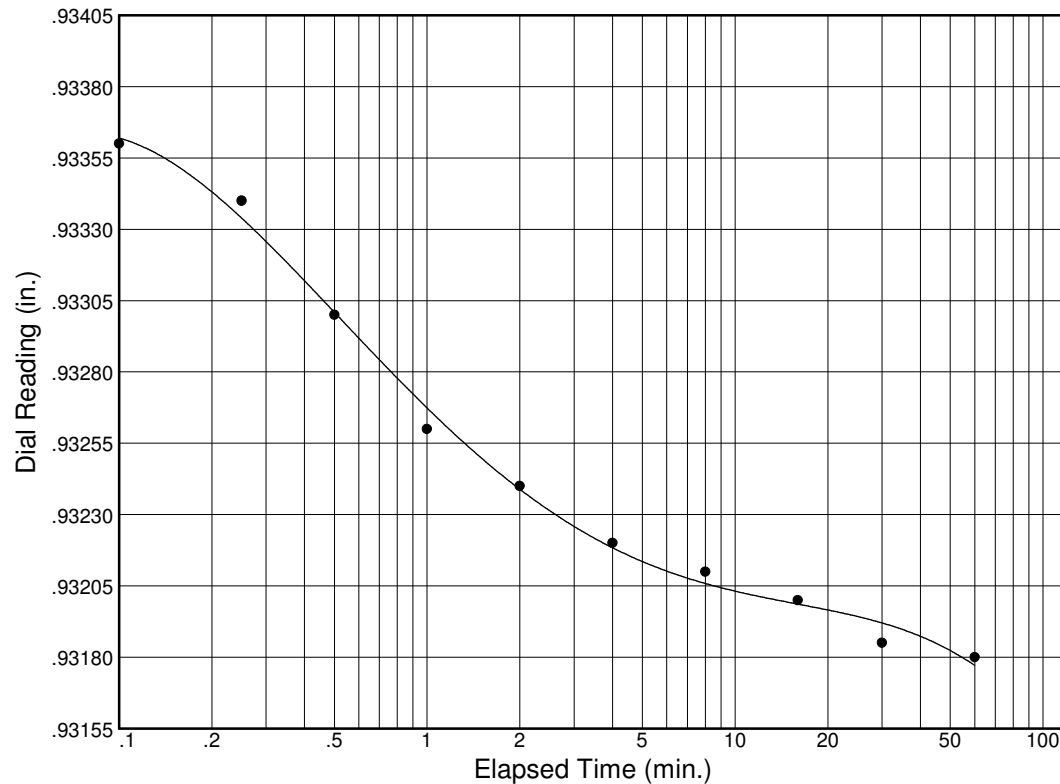
0.23 ft.²/day

$C_\alpha = 0.000$

Dial Reading vs. Time

Project No.: VB14-172G
Project: Elizabeth River Trail

Location: B-2 (26-28 ft.)



Load No.= 9

Load= 0.50 tsf

$D_0 = 0.93413$

$D_{50} = 0.93308$

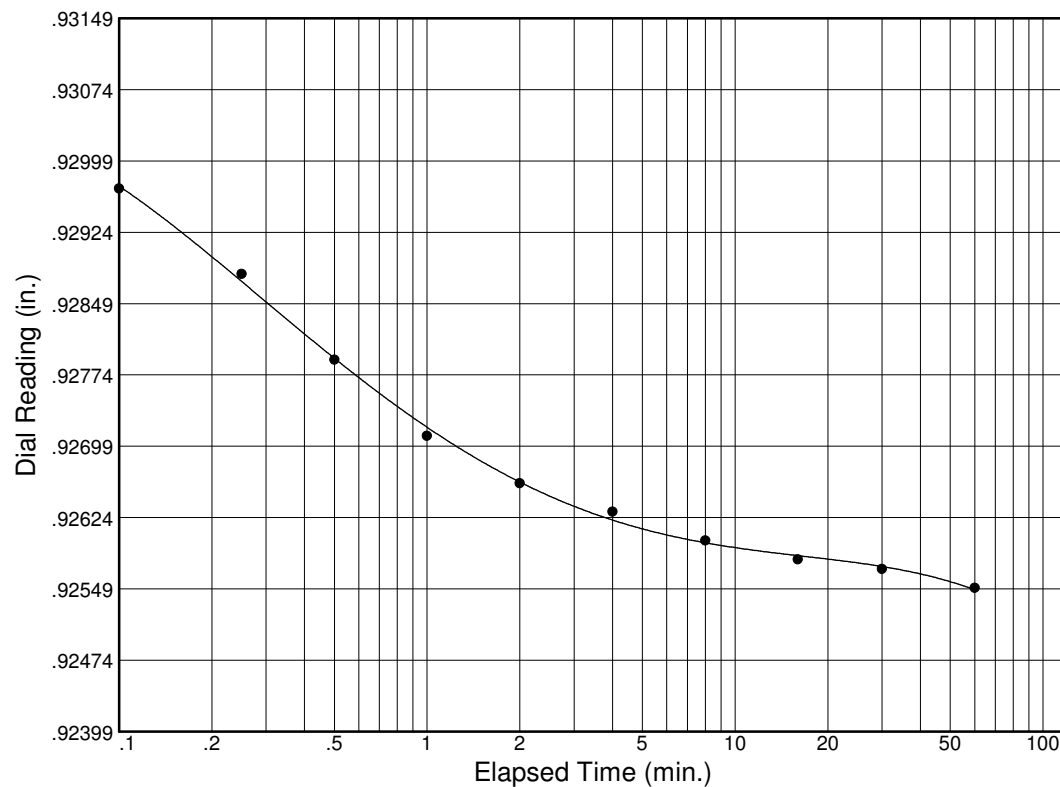
$D_{100} = 0.93204$

$T_{50} = 0.43 \text{ min.}$

$C_v @ T_{50}$

1.00 ft.²/day

$C_\alpha = 0.000$



Load No.= 10

Load= 1.00 tsf

$D_0 = 0.93180$

$D_{50} = 0.92894$

$D_{100} = 0.92608$

$T_{50} = 0.21 \text{ min.}$

$C_v @ T_{50}$

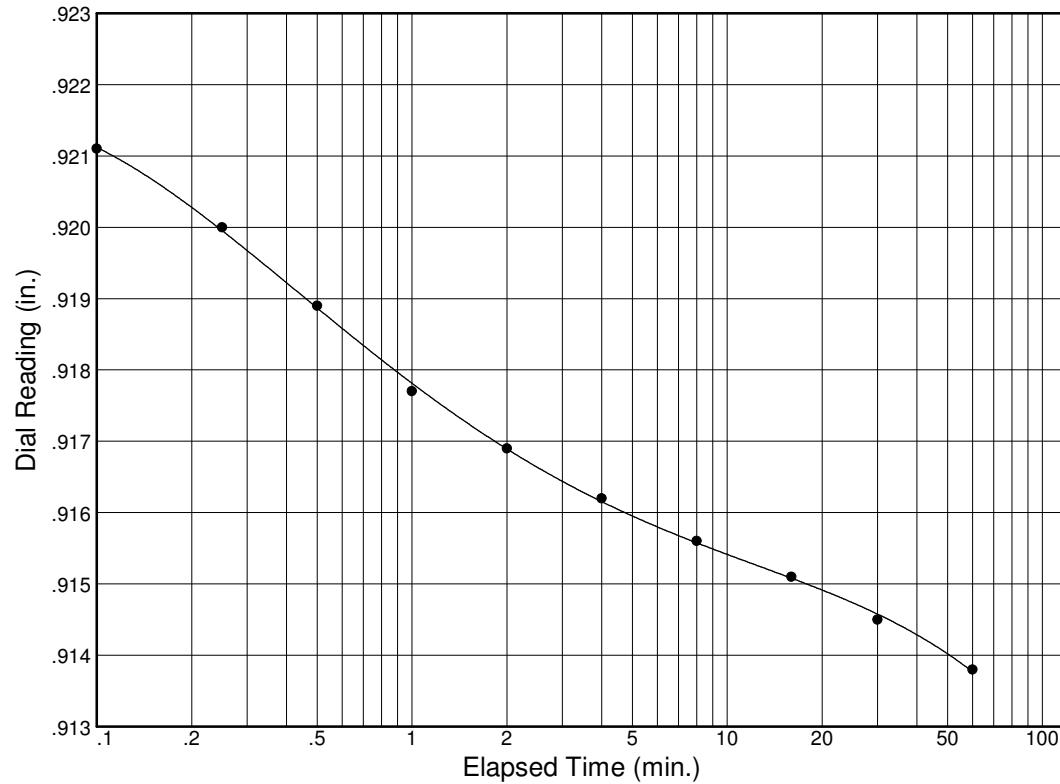
2.05 ft.²/day

$C_\alpha = 0.000$

Dial Reading vs. Time

Project No.: VB14-172G
Project: Elizabeth River Trail

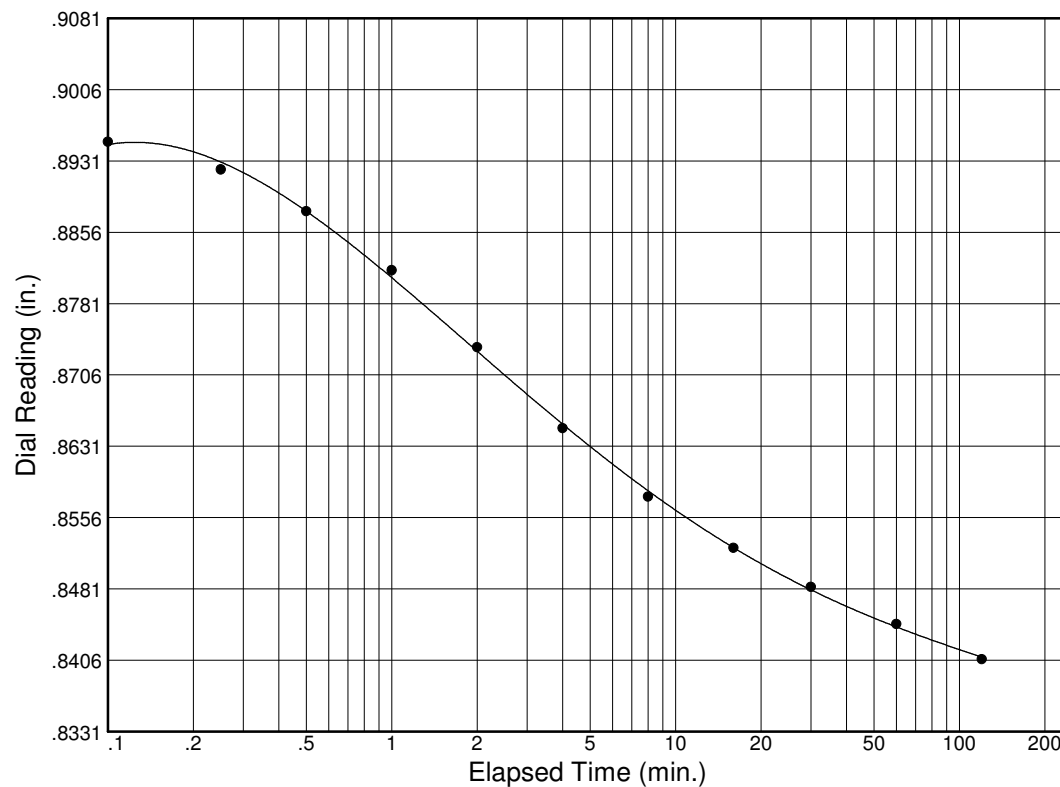
Location: B-2 (26-28 ft.)



Load No.= 11
Load= 2.00 tsf
 $D_0 = 0.92550$
 $D_{50} = 0.92052$
 $D_{100} = 0.91554$
 $T_{50} = 0.17 \text{ min.}$

$C_v @ T_{50}$
2.48 ft.²/day

$C_\alpha = 0.001$



Load No.= 12
Load= 4.00 tsf
 $D_0 = 0.89991$
 $D_{50} = 0.87274$
 $D_{100} = 0.84558$
 $T_{50} = 2.06 \text{ min.}$

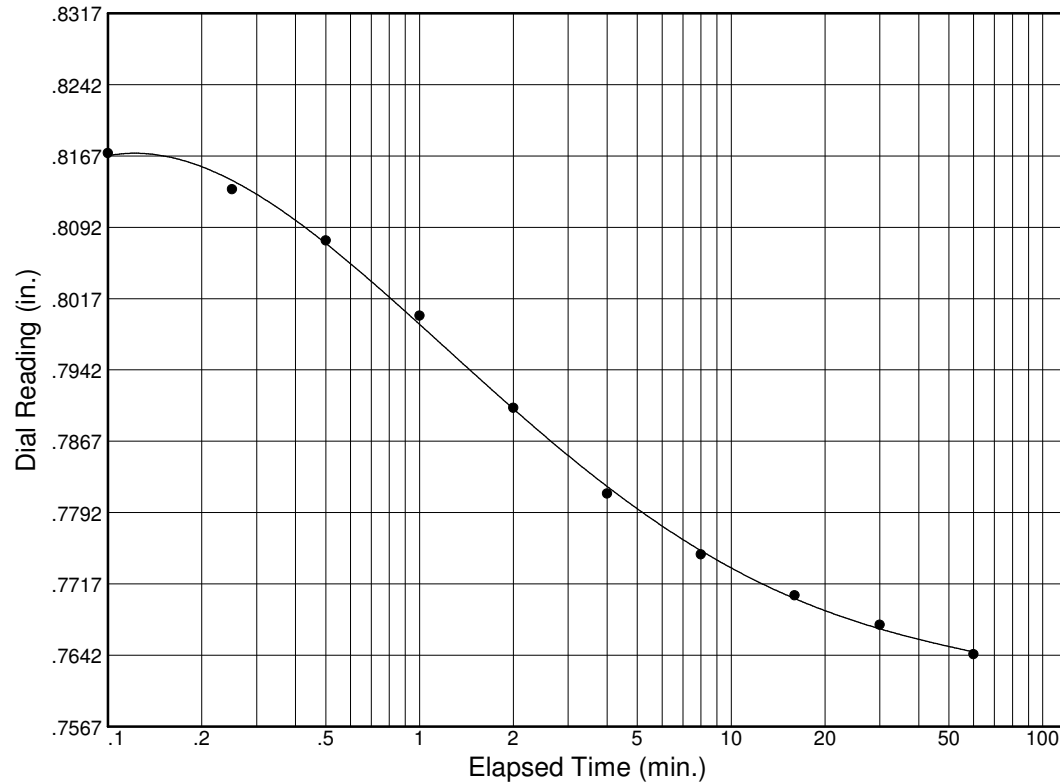
$C_v @ T_{50}$
0.18 ft.²/day

$C_\alpha = 0.005$

Dial Reading vs. Time

Project No.: VB14-172G
Project: Elizabeth River Trail

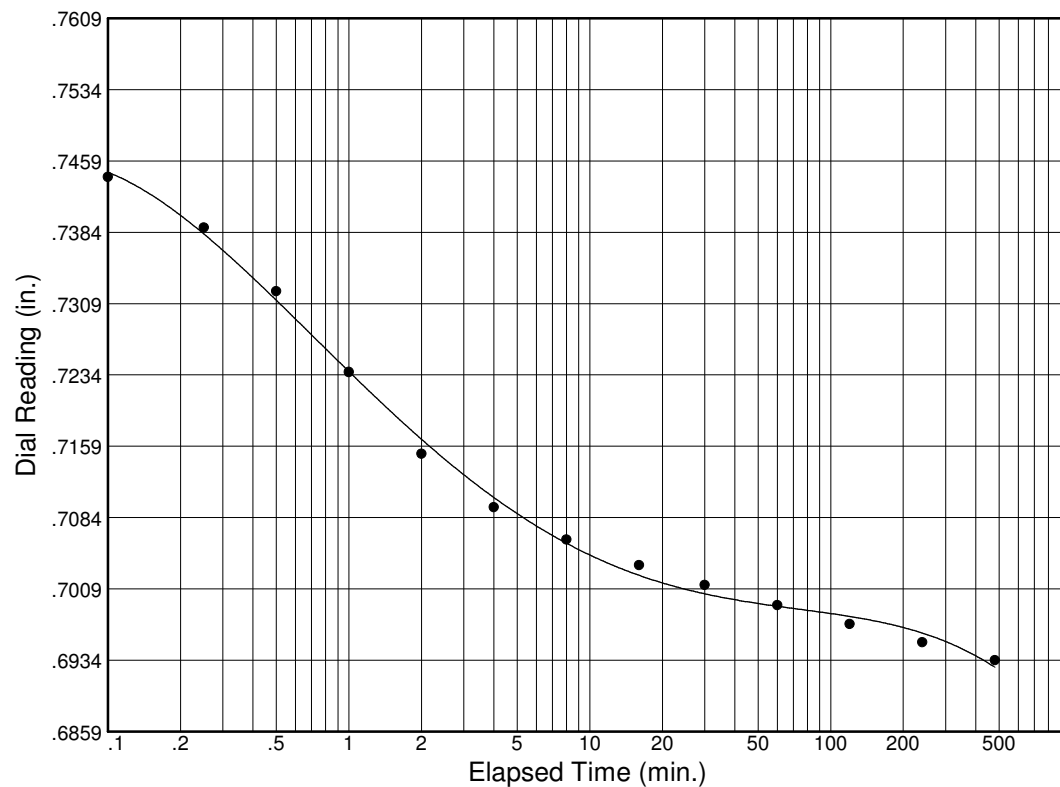
Location: B-2 (26-28 ft.)



Load No.= 13
Load= 8.00 tsf
 $D_0 = 0.82351$
 $D_{50} = 0.79584$
 $D_{100} = 0.76816$
 $T_{50} = 1.28 \text{ min.}$

$C_v @ T_{50}$
0.25 ft.²/day

$C_\alpha = 0.006$



Load No.= 14
Load= 16.00 tsf
 $D_0 = 0.75583$
 $D_{50} = 0.72823$
 $D_{100} = 0.70063$
 $T_{50} = 0.66 \text{ min.}$

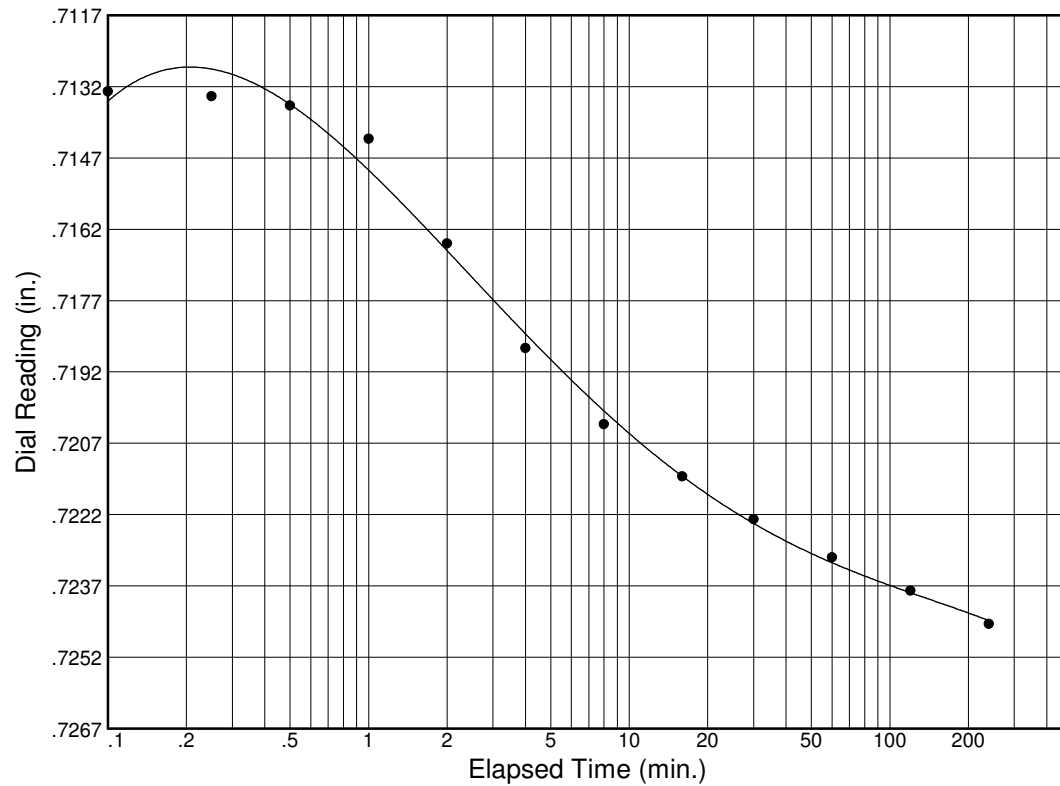
$C_v @ T_{50}$
0.40 ft.²/day

$C_\alpha = 0.002$

Dial Reading vs. Time

Project No.: VB14-172G
Project: Elizabeth River Trail

Location: B-2 (26-28 ft.)



Load No.= 16

Load= 1.00 tsf

$D_0 = 0.71376$

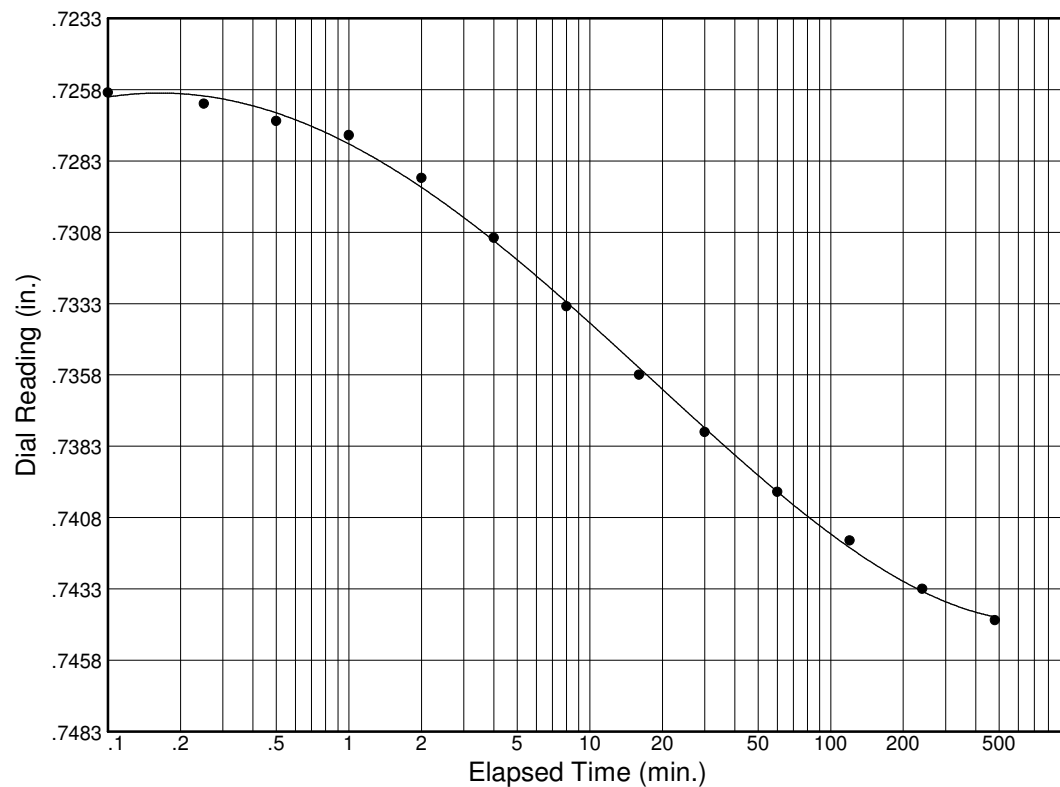
$D_{50} = 0.71854$

$D_{100} = 0.72331$

$T_{50} = 4.23 \text{ min.}$

$C_v @ T_{50}$

0.06 ft.²/day



Load No.= 17

Load= 0.25 tsf

$D_0 = 0.72401$

$D_{50} = 0.73364$

$D_{100} = 0.74326$

$T_{50} = 9.01 \text{ min.}$

$C_v @ T_{50}$

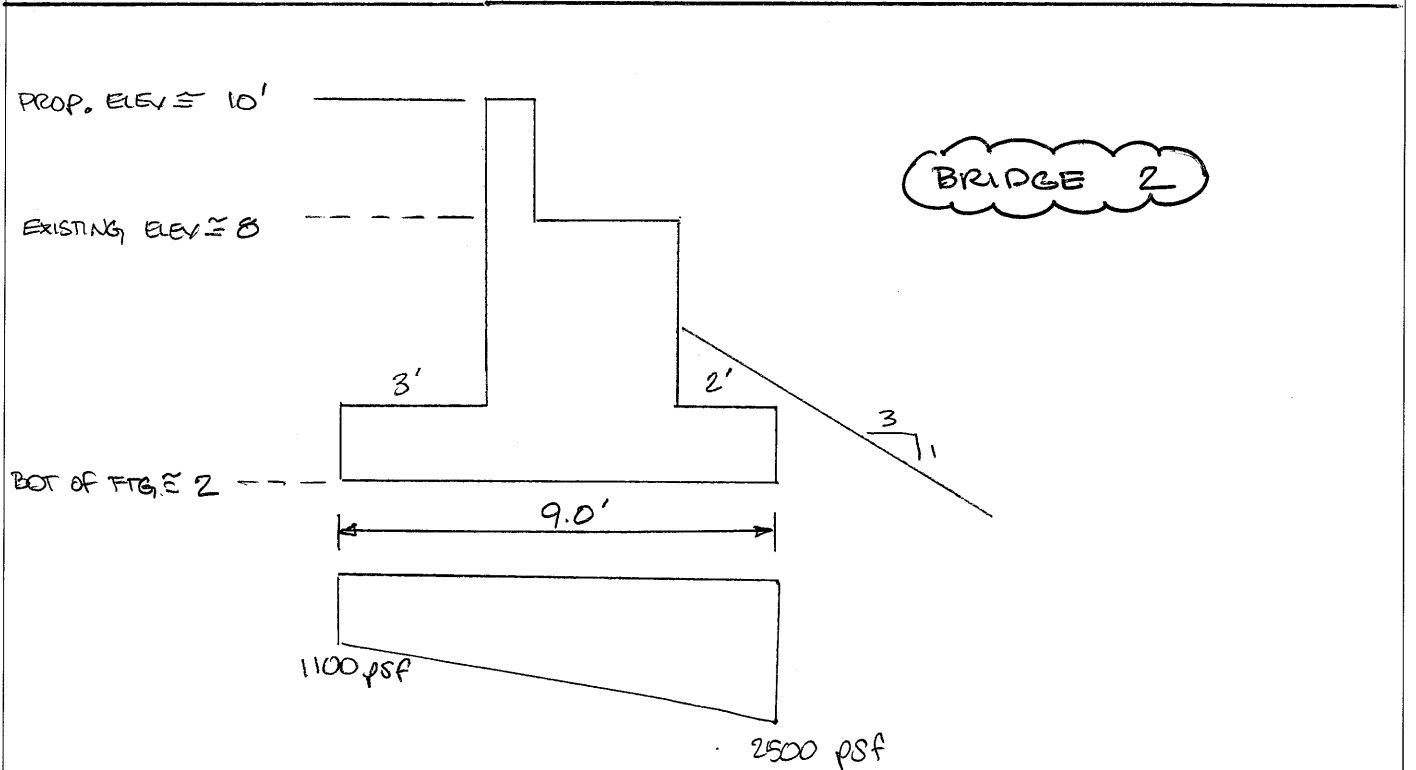
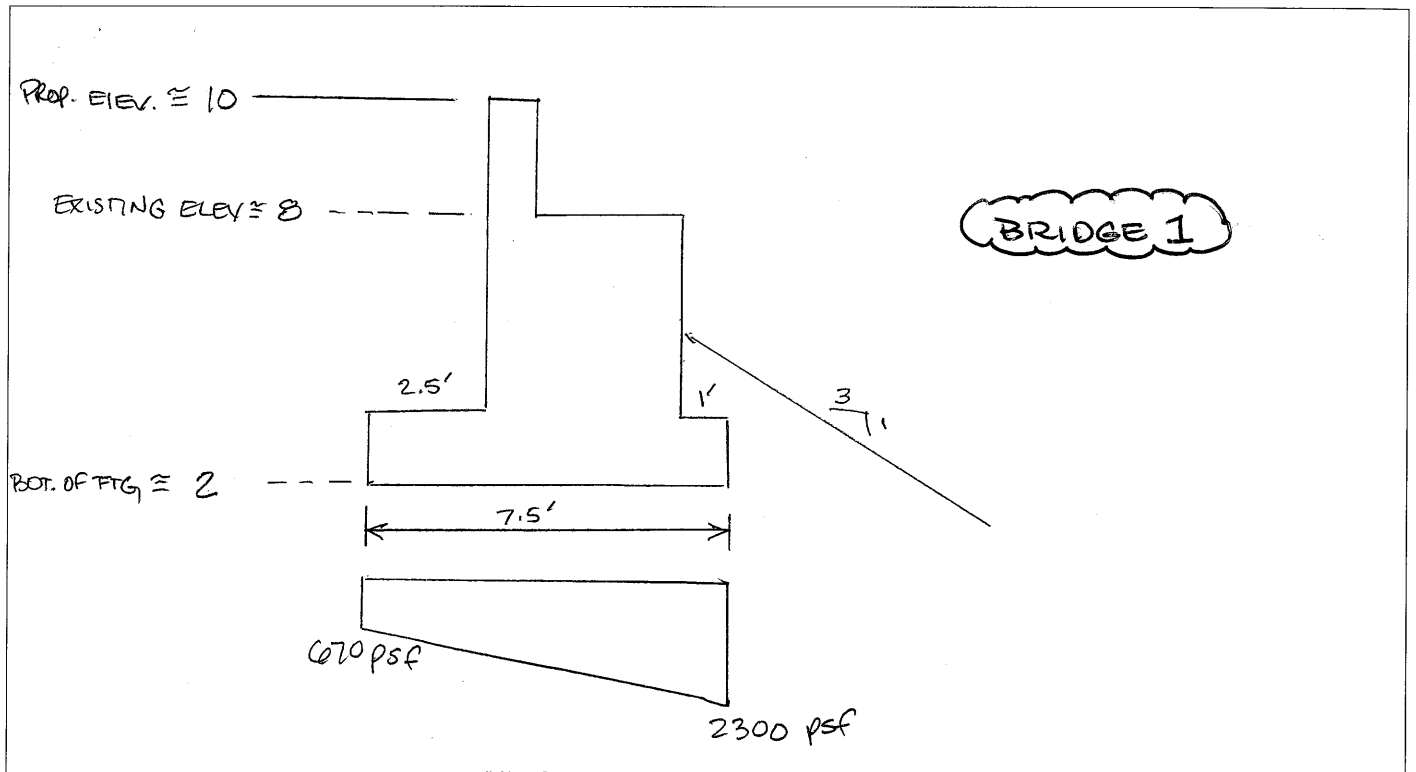
0.03 ft.²/day

APPENDIX VII

PRELIMINARY ABUTMENT DESIGN DETAILS



Project: **ERT PA 111C** Project #
Location: Sheet of
Calculated by: Date:
Checked by: Date:
Title **PRELIM ABUT. DESIGN**



APPENDIX VIII

SLOPE STABILITY ANALYSIS

result.out
 ** STABL for WINDOWS **
 by
 Geotechnical Software Solutions

1

--Slope Stability Analysis--
 Simplified Janbu, Simplified Bishop
 or Spencer's Method of Slices

Run Date:
 Time of Run:
 Run By:
 Input Data Filename: run.in
 Output Filename: result.out
 Unit: U. S. C.
 Plotted Output Filename: result.plt

PROBLEM DESCRIPTION VB14-172G Elizabeth River Trail

BOUNDARY COORDINATES

7 Top Boundaries
 21 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
***** ERROR - PF05 *****			Boundaries 4 and 5		
***** ERROR - PF05 *****			Boundaries 5 and 6		
***** ERROR - PF06 *****			Boundaries 11 and 13		
***** ERROR - PF06 *****			Boundaries 11 and 14		
***** ERROR - PF06 *****			Boundaries 11 and 15		
***** ERROR - PF06 *****			Boundaries 11 and 16		
***** ERROR - PF06 *****			Boundaries 11 and 17		
***** ERROR - PF06 *****			Boundaries 11 and 18		
***** ERROR - PF06 *****			Boundaries 12 and 15		

result.out

**** ERROR - PF06 **** Boundaries 13 and 15

1	0.00	100.00	50.00	100.00	2
2	50.00	100.00	61.00	103.67	2
3	61.00	103.67	61.00	106.00	3
4	61.00	106.00	64.00	106.00	3
5	64.00	108.00	64.00	106.00	3
6	64.00	108.00	65.00	108.00	3
7	65.00	108.00	165.00	108.00	1
8	61.00	106.00	61.00	102.00	3
9	59.00	102.00	61.00	102.00	3
10	59.00	102.00	59.00	100.00	2
11	59.00	100.00	68.00	100.00	2
12	68.00	102.00	68.00	100.00	2
13	65.00	102.00	68.00	102.00	3
14	65.00	108.00	65.00	102.00	3
15	65.00	106.00	165.00	106.00	2
16	64.00	106.00	64.00	108.00	3
17	65.00	102.00	65.00	108.00	3
18	65.00	102.00	68.00	102.00	3
19	65.00	100.00	68.00	100.00	2
20	68.00	102.00	68.00	100.00	2
21	0.00	91.50	165.00	91.50	4

1

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	130.0	0.0	30.0	0.00	0.0	1
2	120.0	130.0	0.0	30.0	0.00	0.0	1
3	150.0	150.0	10000.0	0.0	0.00	0.0	1
4	90.0	100.0	150.0	5.0	0.00	0.0	1

1

1 PIEZOMETRIC SURFACE(S) HAVE BEEN SPECIFIED

Unit Weight of Water = 62.40

Piezometric Surface No. 1 Specified by 2 Coordinate Points

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	100.00
2	165.00	100.00

1

A Critical Failure Surface Searching Method, Using A Random

result.out

Technique For Generating Circular Surfaces, Has Been Specified.

500 Trial Surfaces Have Been Generated.

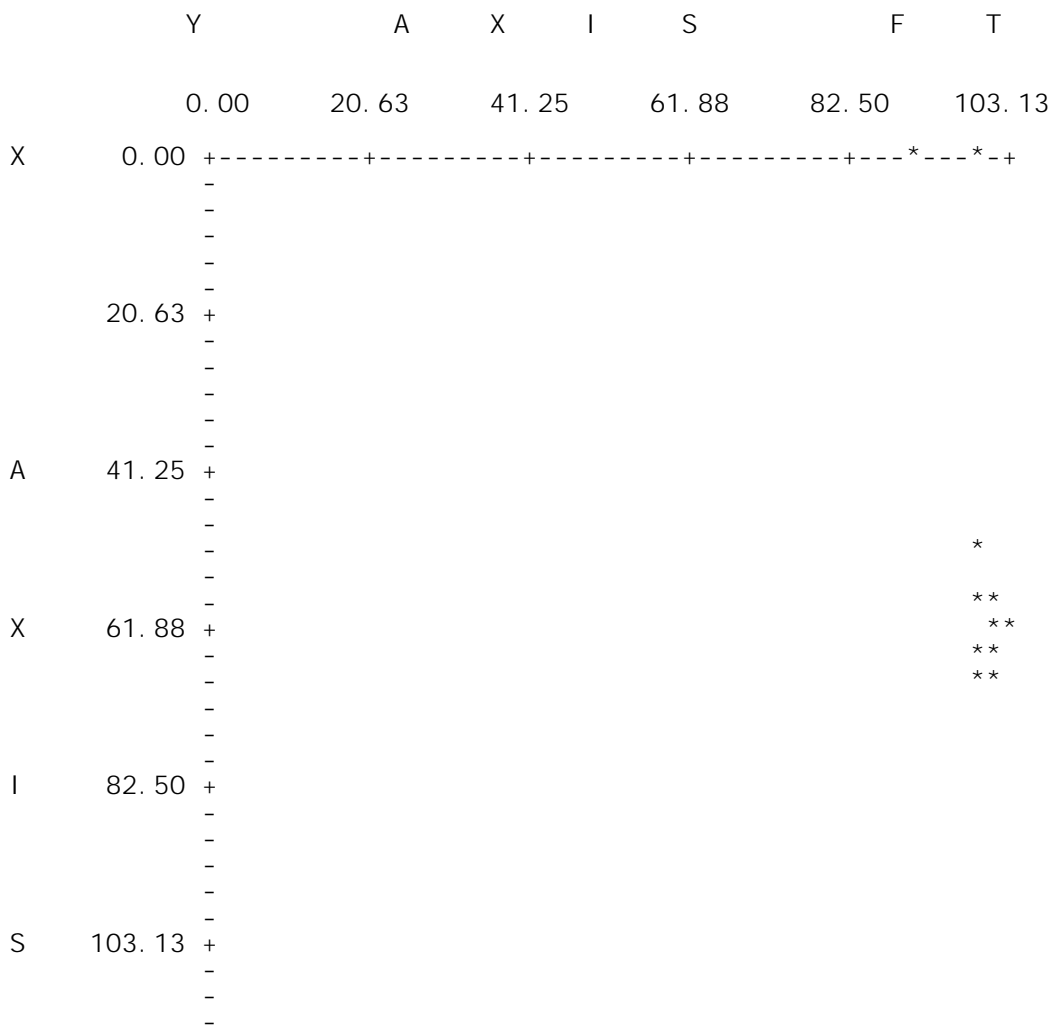
50 Surfaces Initiate From Each Of 10 Points Equally Spaced
 Along The Ground Surface Between $X = 40.00$ ft.
 and $X = 50.00$ ft.

Each Surface Terminates Between $X = 68.00$ ft.
 and $X = 78.00$ ft.

Unless Further Limitations Were Imposed, The Minimum Elevation
 At Which A Surface Extends Is $Y = 0.00$ ft.

1.00 ft. Line Segments Define Each Trial Failure Surface.

1



result.out

```
-
-
123.75 +
-
-
-
-
-
F 144.38 +
-
-
-
-
-
T 165.00 +
* W
```

```
*****
***** EXECUTION OF STABL ABORTED *****
*****
```

1

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Failure Surface Specified By 34 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	44.44	100.00
2	45.30	99.48
3	46.18	99.01
4	47.09	98.58
5	48.01	98.20
6	48.96	97.87
7	49.92	97.60
8	50.89	97.37
9	51.87	97.19
10	52.87	97.07
11	53.86	96.99
12	54.86	96.97
13	55.86	97.01
14	56.86	97.09
15	57.85	97.23
16	58.83	97.42
17	59.80	97.66
18	60.76	97.95
19	61.70	98.29
20	62.62	98.68
21	63.52	99.12
22	64.39	99.60
23	65.24	100.13
24	66.06	100.71
25	66.85	101.32

		resul t. out
26	67. 60	101. 98
27	68. 32	102. 67
28	69. 00	103. 41
29	69. 65	104. 17
30	70. 25	104. 97
31	70. 81	105. 80
32	71. 32	106. 66
33	71. 79	107. 54
34	72. 00	108. 00

Circle Center At X = 54. 7 ; Y = 116. 0 and Radius, 19. 0

*** 1. 605 ***

Individual data on the 41 slices

Slice No.	Width (ft)	Weight (l bs)	Water	Water	Force Norm (l bs)	Force Tan (l bs)	Earthquake		Surcharge Load (l bs)
			Force Top (l bs)	Force Bot (l bs)			Force Hor (l bs)	Force Ver (l bs)	
1	0. 9	28. 8	0. 0	16. 2	0. 0	0. 0	0. 0	0. 0	0. 0
2	0. 9	86. 5	0. 0	47. 1	0. 0	0. 0	0. 0	0. 0	0. 0
3	0. 9	141. 7	0. 0	75. 2	0. 0	0. 0	0. 0	0. 0	0. 0
4	0. 9	193. 4	0. 0	100. 3	0. 0	0. 0	0. 0	0. 0	0. 0
5	0. 9	240. 7	0. 0	122. 3	0. 0	0. 0	0. 0	0. 0	0. 0
6	1. 0	282. 7	0. 0	141. 3	0. 0	0. 0	0. 0	0. 0	0. 0
7	0. 1	26. 4	0. 0	13. 0	0. 0	0. 0	0. 0	0. 0	0. 0
8	0. 9	308. 2	0. 0	144. 1	0. 0	0. 0	0. 0	0. 0	0. 0
9	1. 0	402. 6	0. 0	169. 8	0. 0	0. 0	0. 0	0. 0	0. 0
10	1. 0	464. 5	0. 0	179. 2	0. 0	0. 0	0. 0	0. 0	0. 0
11	1. 0	519. 4	0. 0	185. 3	0. 0	0. 0	0. 0	0. 0	0. 0
12	1. 0	566. 6	0. 0	188. 2	0. 0	0. 0	0. 0	0. 0	0. 0
13	1. 0	605. 6	0. 0	187. 8	0. 0	0. 0	0. 0	0. 0	0. 0
14	1. 0	635. 9	0. 0	184. 1	0. 0	0. 0	0. 0	0. 0	0. 0
15	1. 0	657. 3	0. 0	177. 2	0. 0	0. 0	0. 0	0. 0	0. 0
16	1. 0	669. 5	0. 0	167. 0	0. 0	0. 0	0. 0	0. 0	0. 0
17	0. 2	116. 2	0. 0	27. 7	0. 0	0. 0	0. 0	0. 0	0. 0
18	0. 8	604. 5	0. 0	125. 8	0. 0	0. 0	0. 0	0. 0	0. 0
19	1. 0	724. 2	0. 0	137. 0	0. 0	0. 0	0. 0	0. 0	0. 0
20	0. 2	182. 4	0. 0	32. 1	0. 0	0. 0	0. 0	0. 0	0. 0
21	0. 7	795. 8	0. 0	85. 2	0. 0	0. 0	0. 0	0. 0	0. 0
22	0. 9	1010. 0	0. 0	94. 5	0. 0	0. 0	0. 0	0. 0	0. 0
23	0. 9	937. 8	0. 0	68. 6	0. 0	0. 0	0. 0	0. 0	0. 0
24	0. 5	479. 8	0. 0	25. 7	0. 0	0. 0	0. 0	0. 0	0. 0
25	0. 4	498. 4	0. 0	14. 2	0. 0	0. 0	0. 0	0. 0	0. 0
26	0. 6	743. 9	0. 0	9. 3	0. 0	0. 0	0. 0	0. 0	0. 0
27	0. 0	25. 8	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
28	0. 2	202. 5	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
29	0. 8	745. 2	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
30	0. 8	660. 6	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
31	0. 8	575. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
32	0. 0	16. 2	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
33	0. 7	473. 4	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
34	0. 7	405. 7	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
35	0. 6	324. 5	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
36	0. 6	247. 3	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
37	0. 6	175. 1	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
38	0. 1	30. 1	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0

				resul t. out					
39	0. 4	79. 1	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
40	0. 5	50. 5	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0
41	0. 2	5. 8	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0	0. 0

Fai l ure Surface Speci fi ed By 33 Coordi nate Poi nts

Poi nt No.	X-Surf (ft)	Y-Surf (ft)
1	45. 56	100. 00
2	46. 37	99. 42
3	47. 22	98. 89
4	48. 10	98. 42
5	49. 01	98. 00
6	49. 94	97. 64
7	50. 89	97. 33
8	51. 86	97. 08
9	52. 84	96. 90
10	53. 84	96. 77
11	54. 83	96. 71
12	55. 83	96. 71
13	56. 83	96. 76
14	57. 83	96. 88
15	58. 81	97. 07
16	59. 78	97. 31
17	60. 73	97. 61
18	61. 67	97. 96
19	62. 58	98. 38
20	63. 46	98. 85
21	64. 31	99. 37
22	65. 13	99. 94
23	65. 91	100. 57
24	66. 66	101. 24
25	67. 35	101. 95
26	68. 01	102. 71
27	68. 62	103. 50
28	69. 17	104. 34
29	69. 68	105. 20
30	70. 13	106. 09
31	70. 52	107. 01
32	70. 86	107. 95
33	70. 87	108. 00

Circle Center At X = 55. 4 ; Y = 113. 0 and Radi us, 16. 3

*** 1. 608 ***

1

Fai l ure Surface Speci fi ed By 30 Coordi nate Poi nts

Poi nt No.	X-Surf (ft)	Y-Surf (ft)
1	47. 78	100. 00
2	48. 63	99. 47
3	49. 51	99. 00
4	50. 42	98. 58

		result.out
5	51.35	98.23
6	52.31	97.93
7	53.28	97.70
8	54.26	97.53
9	55.26	97.42
10	56.26	97.37
11	57.26	97.39
12	58.25	97.48
13	59.24	97.63
14	60.22	97.84
15	61.18	98.11
16	62.13	98.44
17	63.04	98.84
18	63.94	99.29
19	64.80	99.80
20	65.62	100.36
21	66.41	100.98
22	67.16	101.64
23	67.87	102.35
24	68.52	103.10
25	69.13	103.90
26	69.69	104.73
27	70.19	105.59
28	70.63	106.49
29	71.02	107.41
30	71.22	108.00

Circle Center At X = 56.4 ; Y = 113.0 and Radius, 15.6

*** 1.612 ***

Failure Surface Specified By 35 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	43.33	100.00
2	44.17	99.45
3	45.03	98.94
4	45.91	98.48
5	46.82	98.06
6	47.75	97.69
7	48.70	97.38
8	49.67	97.11
9	50.64	96.89
10	51.63	96.73
11	52.62	96.62
12	53.62	96.56
13	54.62	96.55
14	55.62	96.60
15	56.62	96.70
16	57.60	96.85
17	58.58	97.06
18	59.55	97.31
19	60.50	97.62
20	61.44	97.97
21	62.35	98.38
22	63.24	98.83

		result.out
23	64.11	99.33
24	64.95	99.87
25	65.76	100.46
26	66.54	101.09
27	67.28	101.76
28	67.99	102.46
29	68.65	103.21
30	69.28	103.99
31	69.87	104.80
32	70.41	105.64
33	70.91	106.50
34	71.36	107.40
35	71.63	108.00

Circle Center At X = 54.2 ; Y = 115.5 and Radius, 18.9

*** 1.621 ***

1

Failure Surface Specified By 30 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	47.78	100.00
2	48.61	99.44
3	49.48	98.95
4	50.37	98.50
5	51.30	98.13
6	52.25	97.81
7	53.22	97.56
8	54.20	97.37
9	55.19	97.25
10	56.19	97.19
11	57.19	97.20
12	58.19	97.28
13	59.17	97.42
14	60.15	97.63
15	61.11	97.91
16	62.06	98.25
17	62.97	98.65
18	63.86	99.11
19	64.71	99.63
20	65.53	100.20
21	66.31	100.83
22	67.05	101.51
23	67.73	102.23
24	68.37	103.00
25	68.96	103.82
26	69.49	104.66
27	69.96	105.54
28	70.37	106.46
29	70.72	107.39
30	70.90	108.00

Circle Center At X = 56.5 ; Y = 112.2 and Radius, 15.0

*** 1.623 *** result.out

Failure Surface Specified By 30 Coordinate Points

Poi nt No.	X-Surf (ft)	Y-Surf (ft)
1	47.78	100.00
2	48.62	99.46
3	49.49	98.98
4	50.40	98.55
5	51.33	98.18
6	52.28	97.88
7	53.25	97.63
8	54.24	97.45
9	55.23	97.34
10	56.23	97.29
11	57.23	97.30
12	58.22	97.38
13	59.21	97.52
14	60.19	97.73
15	61.16	98.00
16	62.10	98.33
17	63.02	98.72
18	63.91	99.17
19	64.77	99.68
20	65.60	100.24
21	66.39	100.85
22	67.14	101.52
23	67.84	102.23
24	68.49	102.99
25	69.10	103.78
26	69.65	104.62
27	70.15	105.48
28	70.59	106.38
29	70.97	107.31
30	71.20	108.00

Circle Center At X = 56.5 ; Y = 112.7 and Radius, 15.4

*** 1.624 ***

1

Failure Surface Specified By 35 Coordinate Points

Poi nt No.	X-Surf (ft)	Y-Surf (ft)
1	44.44	100.00
2	45.31	99.50
3	46.20	99.04
4	47.11	98.63
5	48.04	98.26
6	48.99	97.94

		result. out
7	49.95	97.66
8	50.92	97.44
9	51.91	97.26
10	52.90	97.13
11	53.89	97.05
12	54.89	97.02
13	55.89	97.04
14	56.89	97.11
15	57.88	97.23
16	58.87	97.40
17	59.85	97.62
18	60.81	97.88
19	61.76	98.20
20	62.69	98.56
21	63.61	98.96
22	64.50	99.41
23	65.37	99.91
24	66.21	100.44
25	67.03	101.02
26	67.81	101.64
27	68.57	102.30
28	69.29	102.99
29	69.98	103.72
30	70.62	104.48
31	71.23	105.27
32	71.80	106.09
33	72.33	106.94
34	72.82	107.82
35	72.91	108.00

Circle Center At X = 55.0 ; Y = 117.2 and Radius, 20.1

*** 1.647 ***

Failure Surface Specified By 35 Coordinate Points

Poi nt No.	X-Surf (ft)	Y-Surf (ft)
1	44.44	100.00
2	45.31	99.50
3	46.20	99.04
4	47.11	98.63
5	48.04	98.27
6	48.99	97.95
7	49.95	97.67
8	50.93	97.45
9	51.91	97.27
10	52.90	97.14
11	53.90	97.07
12	54.90	97.04
13	55.90	97.06
14	56.90	97.13
15	57.89	97.25
16	58.88	97.42
17	59.85	97.63
18	60.82	97.90
19	61.77	98.21

		result.out
20	62.70	98.57
21	63.61	98.97
22	64.51	99.42
23	65.38	99.92
24	66.22	100.45
25	67.04	101.03
26	67.83	101.64
27	68.58	102.30
28	69.31	102.99
29	69.99	103.71
30	70.64	104.47
31	71.26	105.26
32	71.83	106.08
33	72.36	106.93
34	72.85	107.80
35	72.95	108.00

Circle Center At X = 55.0 ; Y = 117.3 and Radius, 20.2

*** 1.648 ***

1

Failure Surface Specified By 30 Coordinate Points

Poi nt No.	X-Surf (ft)	Y-Surf (ft)
1	47.78	100.00
2	48.56	99.38
3	49.39	98.81
4	50.25	98.31
5	51.15	97.88
6	52.08	97.51
7	53.04	97.21
8	54.01	96.98
9	55.00	96.83
10	55.99	96.74
11	56.99	96.74
12	57.99	96.80
13	58.98	96.94
14	59.96	97.15
15	60.92	97.43
16	61.85	97.79
17	62.76	98.21
18	63.63	98.70
19	64.47	99.24
20	65.26	99.85
21	66.01	100.52
22	66.70	101.24
23	67.34	102.01
24	67.92	102.83
25	68.44	103.68
26	68.89	104.57
27	69.28	105.49
28	69.60	106.44
29	69.85	107.41
30	69.95	108.00

result. out
Circle Center At X = 56.6 ; Y = 110.3 and Radius, 13.5

*** 1.658 ***

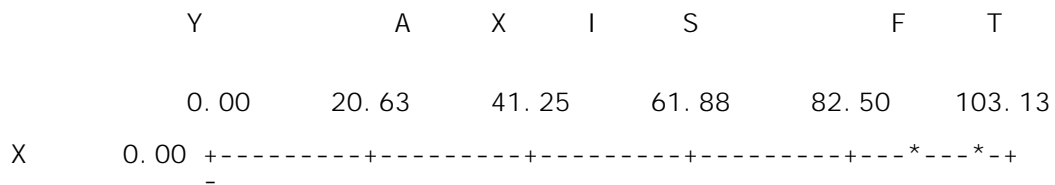
Failure Surface Specified By 32 Coordinate Points

Poi nt No.	X-Surf (ft)	Y-Surf (ft)
1	46.67	100.00
2	47.55	99.53
3	48.46	99.11
4	49.38	98.73
5	50.33	98.40
6	51.29	98.13
7	52.26	97.90
8	53.25	97.73
9	54.24	97.60
10	55.24	97.53
11	56.24	97.51
12	57.24	97.55
13	58.23	97.63
14	59.22	97.77
15	60.20	97.96
16	61.18	98.20
17	62.13	98.50
18	63.07	98.84
19	63.99	99.23
20	64.89	99.66
21	65.77	100.15
22	66.62	100.68
23	67.44	101.25
24	68.22	101.86
25	68.98	102.52
26	69.70	103.21
27	70.38	103.95
28	71.02	104.71
29	71.63	105.51
30	72.19	106.34
31	72.70	107.19
32	73.13	108.00

Circle Center At X = 56.1 ; Y = 116.6 and Radius, 19.1

*** 1.662 ***

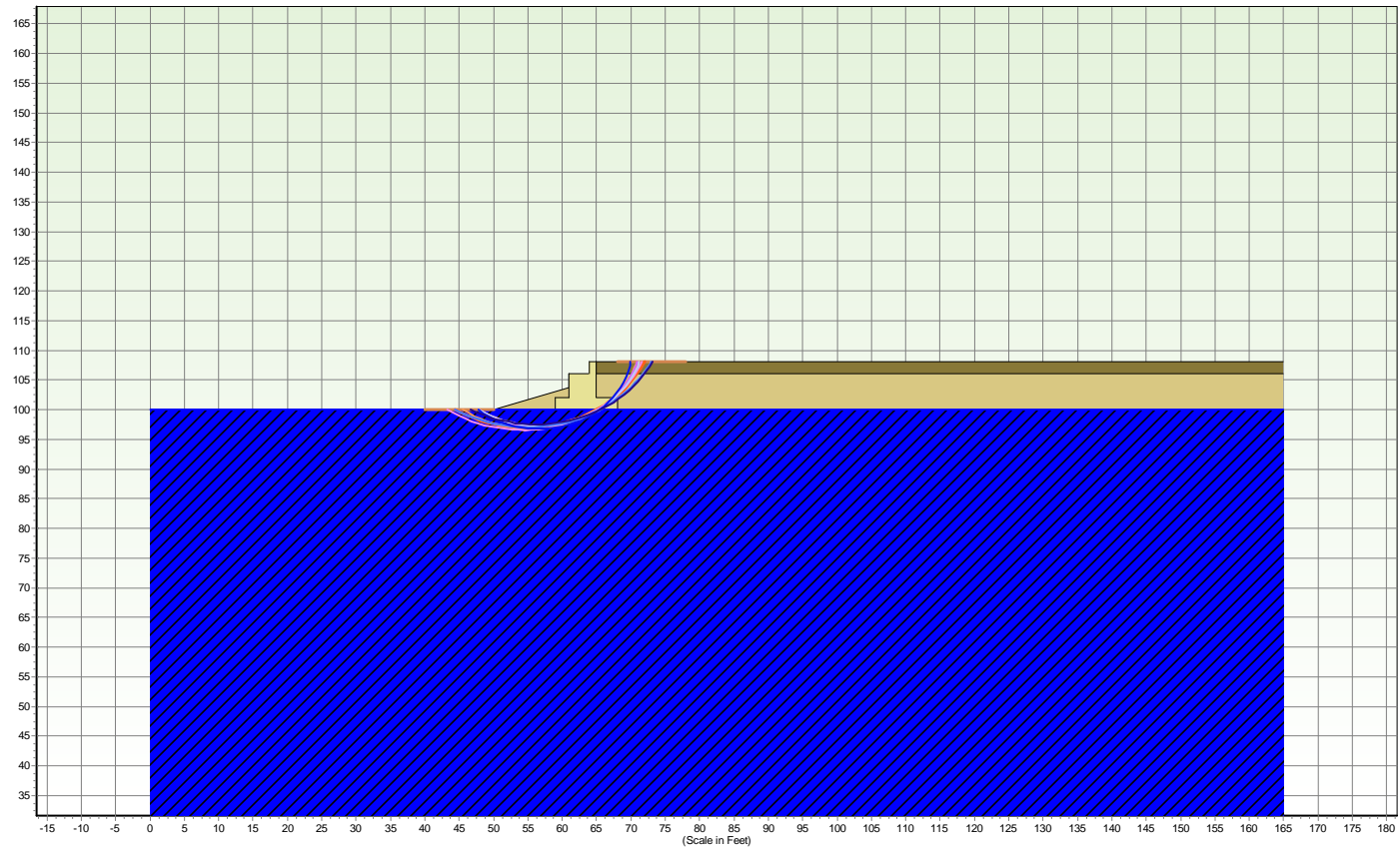
1



```
resul t.out
```

		-	
		-	
		-	
		-	
	20.63	+	
		-	
		-	
		-	
A	41.25	+	.
		-	. . 1
		-	. . 11
		-	. . 1*
		-	. . 1..
X	61.88	+	. . 1**.
		-	. . 11**
		-	. . **
		-	. . **1
		-	. . .
I	82.50	+	.
		-	.
		-	.
S	103.13	+	.
		-	.
		-	.
	123.75	+	.
		-	.
		-	.
F	144.38	+	.
		-	.
		-	.
T	165.00	+	*
		-	W

Problem: VB14-172G Elizabeth River Trail - FS Min- Bishop = 1.605



Distribution of Factors of Safety

